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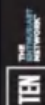
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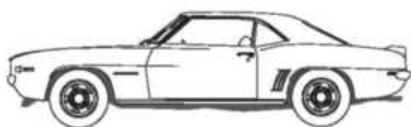
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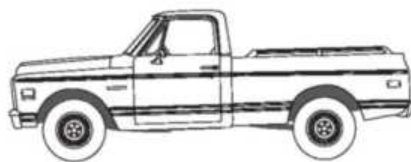
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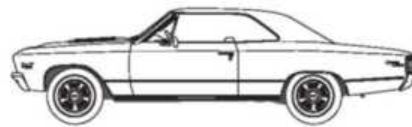
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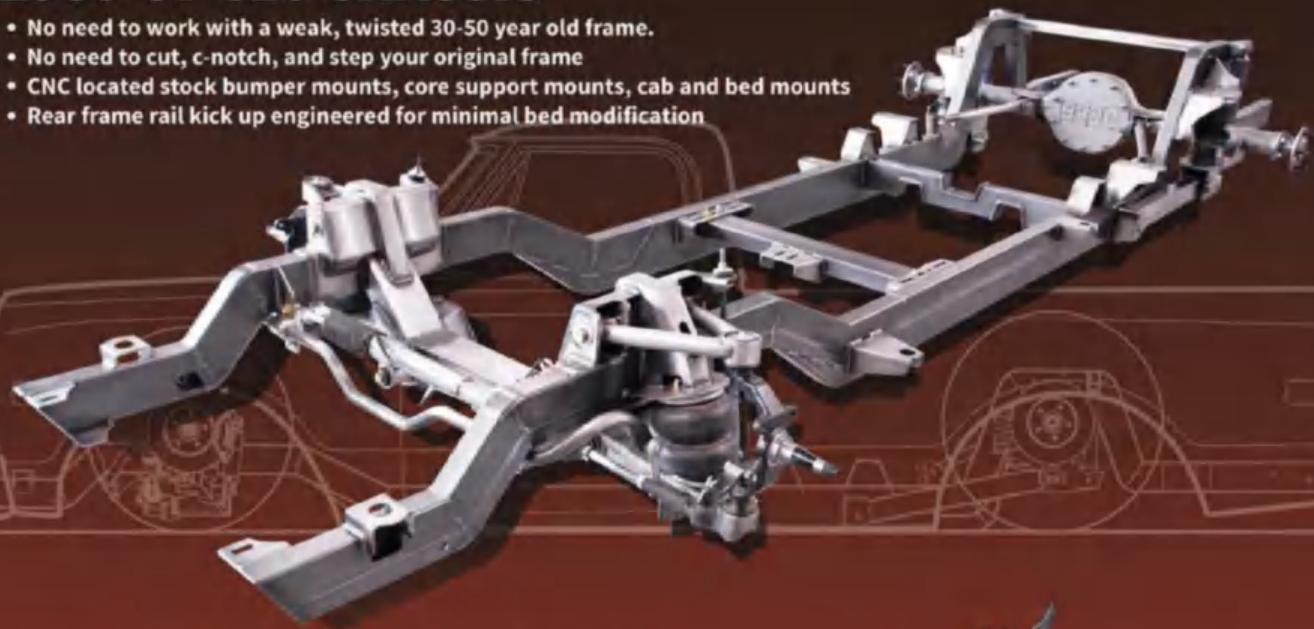
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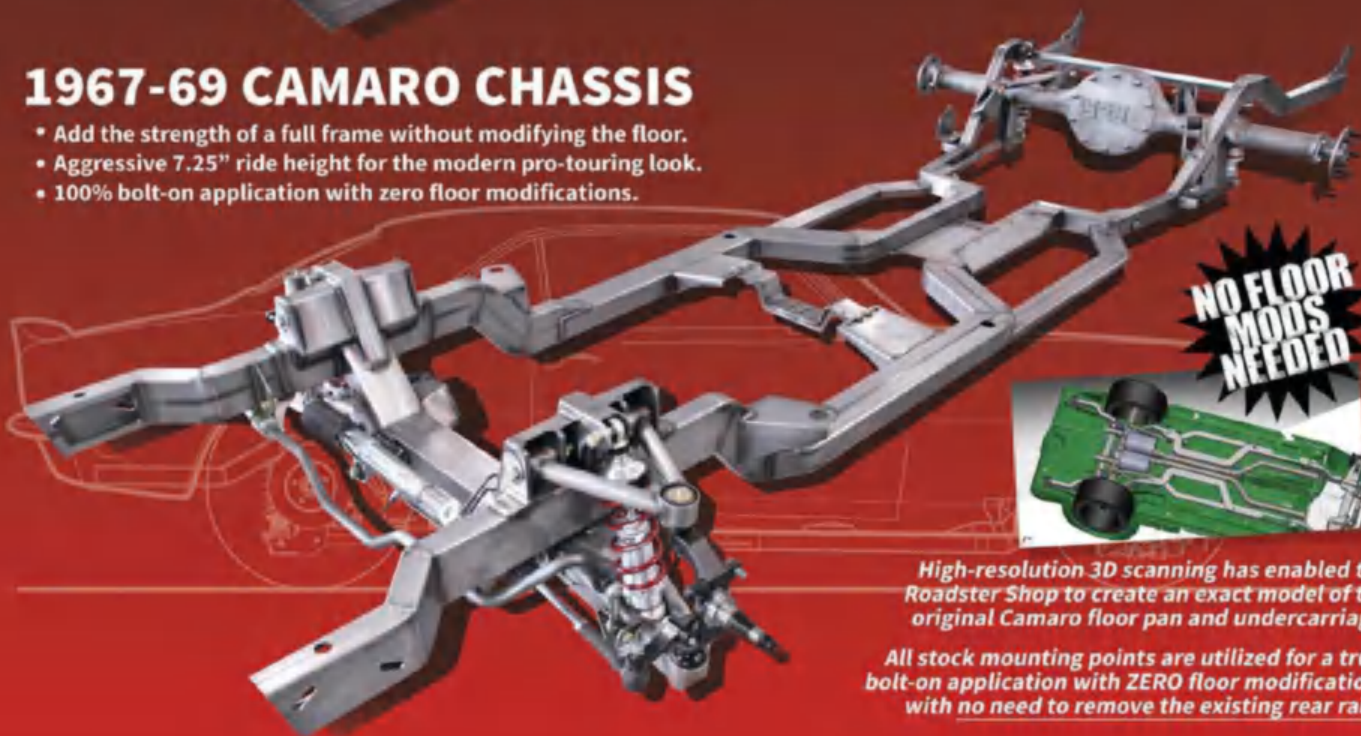
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SPECIAL SECTION

42 TOP 11 CHEVY MUSCLE CARS OF THE YEAR
The *Chevy High* staff and our readers nail down their favorite rides of 2015

» TOC

We love featuring cars built by owners, and in the case of this tasty 1973 Camaro, owner **Jim Stehlin** started working on this project over seven years ago. By the looks of it, we'd say it was well worth the wait. Check out the feature starting on page 20. Photo by **Robert McGaffin**



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» ON THE COVER

We've dedicated the February 2016 issue as the Best of the Best to showcase 11 of the coolest and most talked-about *Chevy High Performance* feature cars from 2015. We hope you enjoy reading it as much as we did putting it together.

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FIRING UP

Nick Licata NLicata@enthusiastnetwork.com



This Goes to 11!

It's one of those random questions that stemmed from a loosely organized BS session that took place during one of our famous late-afternoon coffee breaks held in one of the new-age "breakout" areas of the TEN headquarters in Irvine (actually, it's Santa Ana by a few hundred feet), California (watch out Google and Facebook, we are conducting business in a pretty hip office these days). It happened in between a few sips of an afternoon brew when someone asked, "What is the baddest muscle car of all time?" Seriously!? Like that question can be properly answered in one coffee/tea break? Not gonna happen! A question like that requires hours of debate, a bit of name-calling, and a few swear words thrown in for animation and to confirm everyone's point is taken more serious (that hardly ever works). And after all that there's no guarantee the parties involved will be in agreement – everyone still will have their own idea of what is and who built the baddest muscle car of all time. And the reality is that there is no wrong or right answer; it's 100-percent subjective. The only thing we know for sure is that each person will think he or she is correct and everyone else is dead wrong ... Right?

So that conversation gave me the idea to step back a little and narrow the time frame down from "all time" to just the coolest rides we've featured in *Chevy High Performance* over the last year. If successful, we'll make it a tradition and turn it into a yearly thing. I'm thinking this will be a great way for us to revisit cars from the previous year and give them another go in the magazine and on chevyhiperformance.com.

So, we went back to the "brew crew" (*Chevy High Performance* editors and editors from other car publications in our office) laid out all the features from 2015 and asked them to help us compile an initial round that included 20 of the baddest rides from 2015. We then went to the *CHP* social media sites (Facebook, Instagram, Twitter, and Google+) to get user feedback on our list of 20. We looked over the posts and took into account the comments and number of "likes" those cars got, then whittled it down to the Top 11 cars of 2015.

You may be asking why we didn't stop at picking just 10? To paraphrase Spinal Tap's lead guitarist Nigel Tufnel, "this one goes to 11." And to be honest, we had such a difficult time coming to an agreement on choosing the last few cars that we just decided to make it a Top 11 list. This kept physical

and psychological damage to a minimum, and if you think about it, a Top 10 list is so David Letterman.

While you browse through our Top 11 feature cars of 2015 starting on page 42, you'll notice a variety of styles that should give just about any Chevy muscle car fan something they can relate to. Be it build style, stance, wheel combination, or powerplant, every car on the list will give you an idea that can be applied to your own project.

Although we have yet to agree on who built the baddest muscle car of

all time, the names Mark Stielow and Big Red continue to come up in our coffee break conversations.

With that said, we could use your input on the subject. Email me at nlicata@enthusiastnetwork.com with what you believe to be the baddest muscle car of all time.

This should be good ...
You in?





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FIRING BACK

✦ By **Nick Licata**

☉ I'M IN

Hi Nick,

I've often felt compelled to respond to a magazine article or commentary but have not done so until now. I was, and still am, enjoying the direction you and your team are taking the magazine, and in my humble opinion it was long overdue.

I'm 59 years young and I learned about small-block Chevy engines when I was 17 years old. I had a 1968 Camaro, 327, 210 horse, three on the tree, and I had also picked up another small-block, high-compression motor that had some problems. Well, I went to Chevrolet and picked up a manual for a '68 Camaro, tore both motors down and then went to visit the local Napa Auto Parts store because I'd heard they had a machine shop. Imagine a longhair (it was 1972) asking to go into the machine shop only to find a guy about the age I am now, and telling him what I was doing and what I wanted to end up with but didn't know about the older engine's problem. He turned out to be quite a nice guy and mentor; seeming to enjoy my passion, I believe, just from my wanting to know everything I could about something that he did most every day of his life. He showed me how to test clearances, replace valvetrains, and how to bore and prep an engine for assembly. We bored my Camaro block, checked all the internals of the compression motor to swap into the Camaro block. A buddy of mine who worked at Reed Cams ground me a ridiculous hydraulic cam to put into it.

I took everything back to my parents' garage, got my Camaro manual, picked up a few more tools, and went to work. I dropped it in my Camaro, added a four-speed and it fired on the third try. I was all-in from that point on!

What I enjoy most about your magazine is the willingness to take on tech articles on all the generations of LS motors, especially the details of cutting-edge technology and how-to's! I'm liking the details about them, both inside and out!

I am fortunate enough to own a 1972 Nova small-block and a 1969 Dodge Dart Slant Six (It's my wife's. No, really!). I want to continue to learn things and just try something different with the Gen III and IV LS motors, and even the Gen III Hemis that are now available in junkyards.

I know there are generations that need the knowledge and experience of working on the small- and big-block Chevy engines, and I have to admit that I still like to read about all the new and interesting things going on with these two powerhouses, so please keep the info coming. I also understand the necessity for the many ads in our magazines, but I would rather have lower annual magazine costs instead; and besides, new items come out almost every month in these ads, which sends me straight to my computer to do more research. Seeing and reading about other enthusiasts' rides is enjoyable, too; just not too many, since catching car shows and other events are fairly regular happenings these days.

Keep up the good work. You are all very much appreciated by the vast majority of us for the time and effort you put into making a very good magazine!

Regards,

S A Wilson

Braselton, GA

Mr. Licata,

I look forward to your commentary (Firing Up) in *Chevy High Performance*. In your relatively short time at the helm, I've become a follower of the message you bring to your readers each month. I'm impressed with the story lines you choose, the composing quality, and the tell-it-like-it-is nature you have. I just finished reading July's subject on TV auto shows and didn't realize there were so many of these "super-tight-deadline-to-get-etc-etc ..." scenarios! Not only are most of them (that I've seen so far) unrealistic to me, but the melodrama gets boring in a hurry. But you do bring out that there is purpose to these reality shows; yet, that only the "watchable" should survive.

Yes, I did receive my August issue of *CHP*, and briefly glanced at your "donuts vs. dragstrips" subject, but I'll absorb that later. For now, I just wanted to let you know I enjoy and learn from your monthly write-ups.

My best to you in your new role. I'm in.

Bill Hinkley

Centerville (Dayton), OH

p.s. my ride is a 1968 Impala SS427 Sport Coupe (a little modified)

Good afternoon, Mr. Licata,

I received my November issue of *Chevy High Performance* magazine, and was rather disheartened by the letters of people letting their subscriptions lapse. You are stuck between a rock and a hard place. Used to be that the magazines were the only outlet for what's new/tech articles. Nowadays, Saturday and Sunday morning television is wall to wall auto-tech-how-to, the Internet is loaded with it, including every magazine having their own website, some even letting their articles be read by people not paying a subscription. Add to that, you are trying to span a chasm of tech

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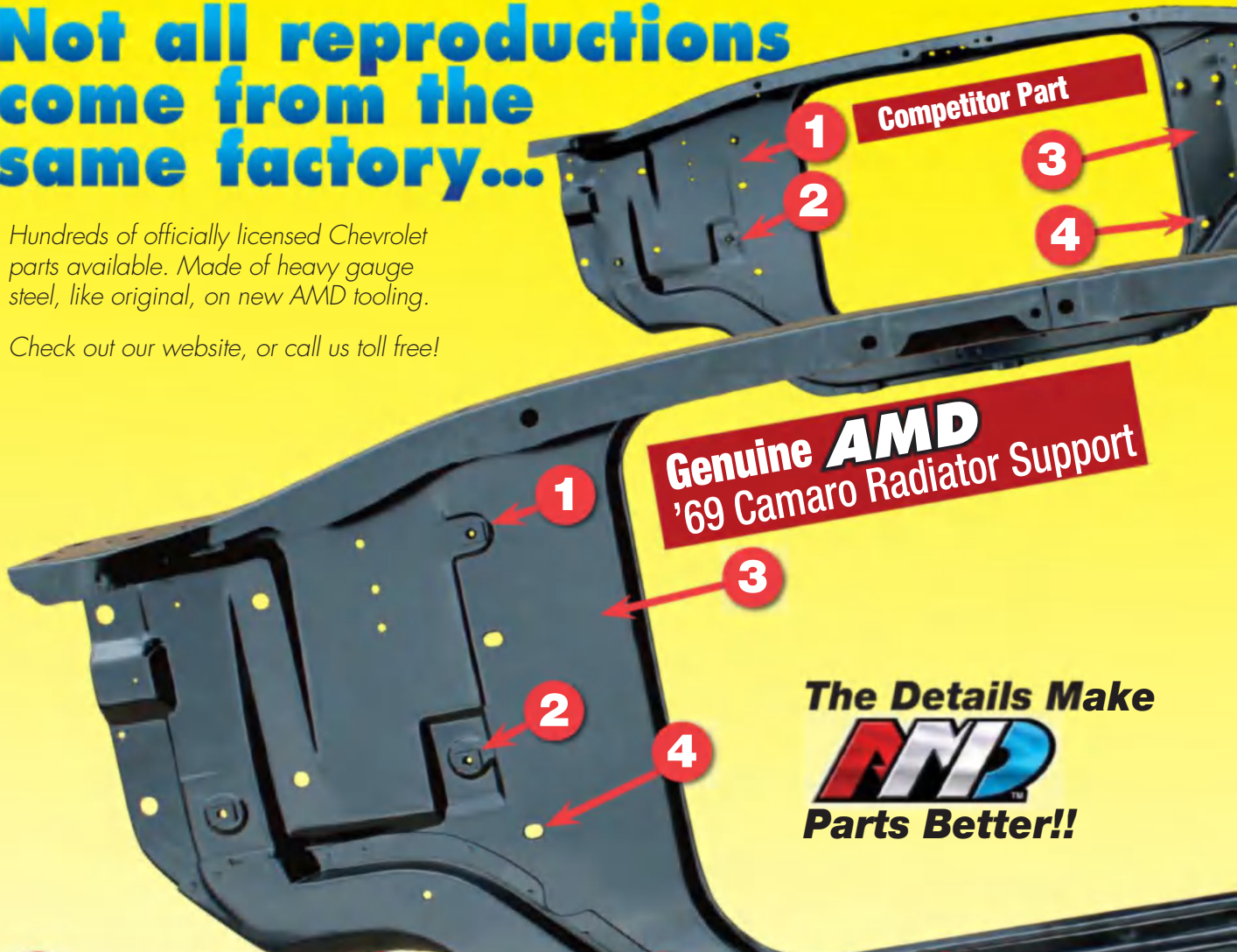


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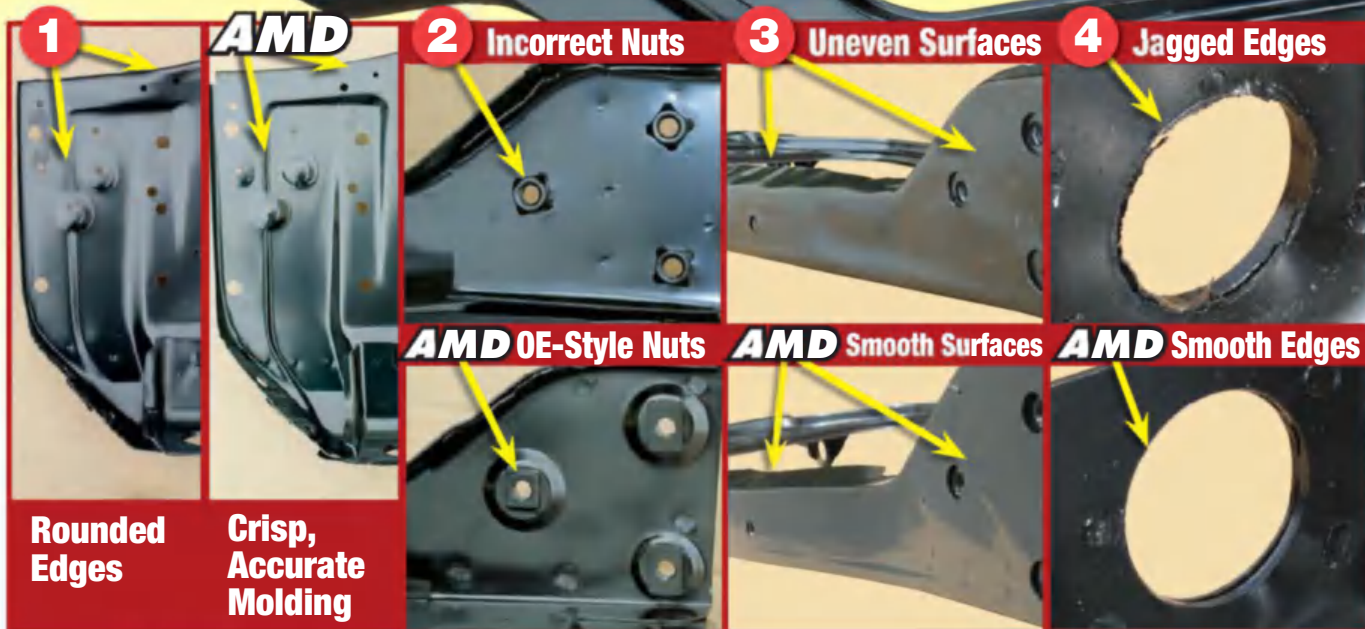
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from the mid 1950s to present, and trying to make everyone happy in the process – not an easy task, to say the least. Some of the letters are complaints about Kevin McClelland's column being gone, and I, too, miss his Q&A section. In my opinion, he was the best part of a very good magazine.

For those leaving, here are a couple things to consider: If you think you are going to find better in other magazines, think again. I gave up *Hot Rod* because it simply

became a bash fest between Chevy, Ford, and Mopar. But there were just as many (if not more) pages of advertising, the same install this \$5K super/turbocharger into your \$60K Mustang, Camaro, or Charger for an extra 100 hp, and plug a Bullydog into your GMC one-ton Duramax so you can smoke the tires like everyone else.

The sad fact is as the vehicles become more advanced, the less actual wrenching that can be done. Go into the auto parts house today

and ask the kid behind the counter what the dwell angle is supposed to be on a SBC, and you will get the deer-in-the-headlights look. On the other hand, they can probably tell you how to tinker with the ECM of an engine to gain horsepower. I am as nostalgic as the next guy, so to me, there's nothing more fun than digging into a Mark IV big-block Chevy and looking to hop up the cam or other mods to find the extra ponies that are locked away. With that said, the bottom line is that the LS engine is here to stay. In the not-so-distant past when gas was well into the \$4/gal range, the LS engine looked bright as it could make great power while not breaking the bank on fuel. I still want to see SBC and BBC builds, even inline-six and V-6 builds. But the LS engine is a fantastic powerplant that may keep the younger crowd doing what we have been doing for most of our lives: rodding and racing.

Like everything worthwhile in life, it is important to get the youngsters into our hobby if it is to survive. It is even tougher for a magazine, considering how many under-30-year olds do not subscribe to print magazines. I ask those that are letting their subscriptions lapse to reconsider.

There is an old axiom, "take what you want and leave the rest." *Chevy High Performance* magazine still has something for everyone.

I'm staying.

Thanks,

Al Hauser
Superior, WI

Al,

Very well said, and I appreciate the kind words.

-Ed

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ON THE FENCE

Hi Nick,

I'm Bob Lomax and have been a subscriber to *Chevy High Performance* for longer than I can remember and a regular reader before that. In the not too distant past *Chevy High Performance* was the stand-alone top-shelf publication in the industry – the standard by which all others strive to attain. Not so much now. The difference ... the noticeable absence of Kevin McClelland's Q&A column.

Reviewing the history of *Chevy*

High Performance, the Q&A column was in the back of the magazine for many years, almost as an afterthought. However, the column was so popular with the readers, that it was moved to the front of the magazine. Many readers, myself included, always read that column first. The content was nothing short of excellent. I learned a lot about hot rodding from that column, including swapping parts, engine combinations, transmissions, etc. The most important topics covered were the troubleshooting problems. Most often, Kevin was not only able to diagnose the problem or provide some options, but offered solutions that covered a wide range of manufacturers, specific part numbers, and/or he referred readers to someone who had further information to help solve whatever problem was being dealt with. The loss of that column was not only a blow to *Chevy High Performance*, but to the hot rodding community as a whole.

As it stands now, *Chevy High Performance* appears to be just another middle-shelf publication that has what most other hot rod magazines have: an editorial(s), current drag race information, a few technical articles, and some really nice feature cars. I do hope you are actively searching the industry for someone who can write a quality Q&A column similar to Kevin's. That would put *Chevy High Performance* back on the top shelf.

Will I continue to subscribe? I just don't know, will just have to wait and see.

Just sayn', and thanks for listening.

Best Regards,

Bob

Via Email

⊙ DONUT DERELICTS

Nick,

I quit writing to magazines long ago because I never get a response. At least they could write a one-line response, "I got your e-mail." I believe my subscription is just as important as John Force's.

Anyway, your donut editorial in the August 2015 issue hit a nerve. I totally agree with you, only add "burnout contests" to the list. What a waste of machinery to watch some A-hole sit there and

burn his tires off till the car blows up, and people think it's funny. Then I think, I'd be the idiot buying that piece of junk, because detailers can make a piece of junk look like new.

Dave Tiffe

Cleveland, Ohio

⊙ SOCIAL STANDARDS

Good article in the Sept. 2015 issue (Just Sayin', page 82) regarding how people misbehave on social media sites. It's one reason the hobby isn't drawing in a lot of young

people – not worth the abuse. You see it from a different angle and get respect for your position and knowledge. I like your line. I want people to be nicer to each other period. Ego gets in the way.

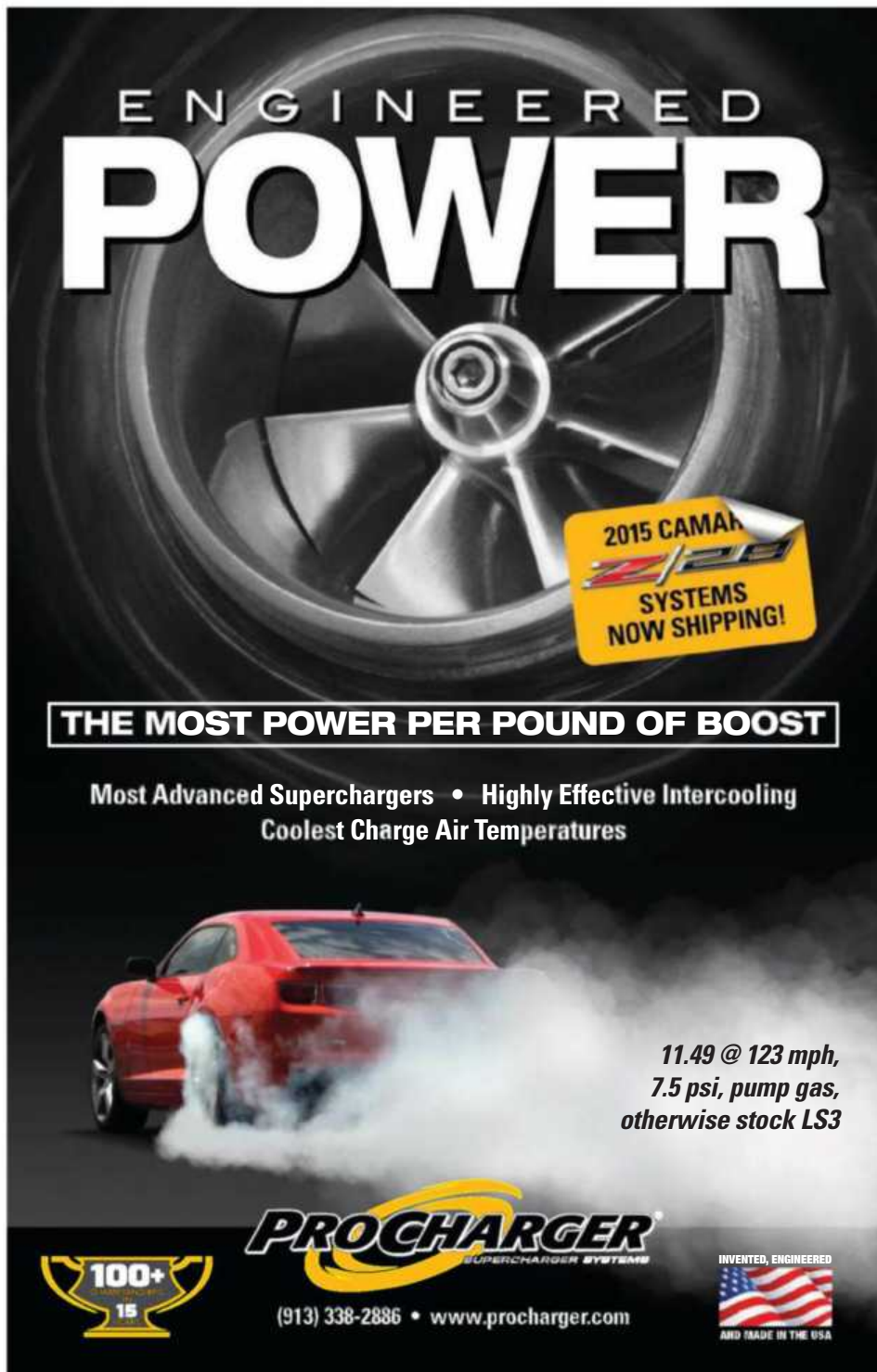
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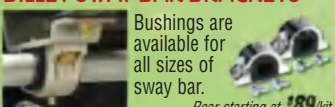
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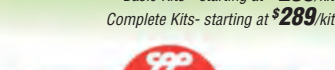
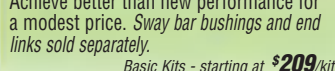
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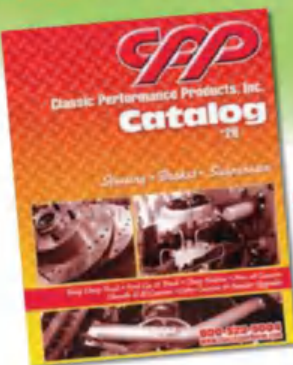


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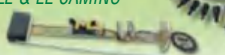
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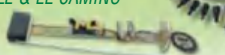
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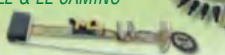
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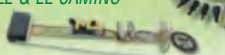
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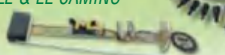
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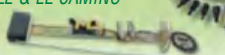
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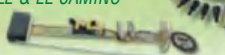
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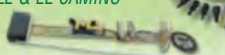
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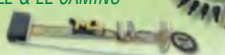
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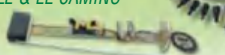
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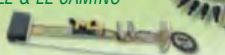
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STRAIGHT LINE▶ SPOTLIGHT

❖ TEXT & PHOTOS: **Bruce Biegler**



Wicked in White

❖ Rochester, New York, is home base to a formidable and long-lasting 1967 Camaro Super Stocker. Driven by Pete D'Agnolo, the popular car is a force to be reckoned with in both NHRA and IHRA Eastern competition, having now won national event level races within both sanctioning bodies. Now classed as SS/CM and using an interesting 336ci Chevy small-block configuration, this particular car has seen a variety of versions over its storied history. The Camaro was actually purchased

brand new by Pete's father and racing partner Sam D'Agnolo who first raced it successfully in conjunction with his brother Tony, in both Modified and Competition Eliminator prior to its conversion for Super Stock a number of seasons ago. The S&R Automotive Camaro, which features some chassis work by ATE Race Cars and engine components from Patterson Racing, regularly runs well under the SS/CM 9.50 e.t. class index with high eight-second elapsed time capability.

Screaming Innovation

❖ Within the popular Fastest Street Car racing scene, the 1978 Malibu owned by Missouri's Jason Carter and driven by Mark Micke stands alone. Not only is this truly creative turbocharged car unique, it is also of championship pedigree. During 2013, the duo scored a points championship in the (now defunct) ADRL Pro Drag Radial category and then duplicated that by also winning the NMCA championship in the Super Street 10.5 class (winning four of five events attended). Focus is now within the NMCA's demanding Mickey Thompson Drag Radial category. A new dimension is that the team has converted its combination from gasoline to an alcohol-burning Nelson Competition-built 540ci engine equipped with twin 98mm Garrett GTX turbochargers. The performance objectives are stout, with the team targeting runs in the 4.0-sec zone and speeds nearing 190 mph (eighth-mile).



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Excalibur Exposed

◆ Lester Johnson and his wife, Jennifer, campaign a 1955 Chevy with a truly unique background spin: Their Kentucky-based Top Sportsman machine was built back in 2010 by Steve Matukas (Matukas Motorsport Race Cars) and has been an impressive runner ever since, winning numerous Quick 8 events and finishing high in Top Sportsman points. In fact, Lester's awesome machine qualified Number One for the 2015 NHRA Jegs Allstars event at Chicago and finished runner-up. The car features a 540ci engine program that is topped with an F3-139 ProCharger assembled by Snyder Motorsports. The car, which is highly active in both

eighth- and quarter-mile competition has a best quarter-mile e.t. of 6.43 at 221 mph. But the unique angle for this team is in fact within the Excalibur name. Lester reports that choice is a direct result of some extremely good fortune that he and his wife enjoyed back in 2006. "That year, Jennifer and I went to Las Vegas to get married — we were staying at the Excalibur hotel," Lester explained. "While waiting on her to come down for breakfast one morning I put \$20 in a slot machine and won big! That allowed me to build this car the way I wanted it and we call it Excalibur because of that good luck."



Buckeye Earth Shaker

◆ The utilization of ProCharger technology continues to ramp up in both popularity and frequency within NHRA's Competition Eliminator category. Ohio's Chuck Haubiel, who is a lawyer by profession based out of Columbus, Ohio, has been turning heads since debuting his awesome-looking ProCharger supercharged 2015 Camaro during mid 2015. At first glance, this car, which was expertly built by Tennessee's Darren Breaud (B & B Race Cars) looks very much like a retrofitted Pro Stock car but is in fact purpose-built for the CC/A category. At only 375 ci (with an F3-131 ProCharger), Haubiel employs a unique and



very powerful engine program that has been dyno-tested at 2,645 hp! The sleek Camaro features a body by Five Star and a terrific-looking paint scheme, which helps to showcase Haubiel's primary sponsor:

Jax Wax premium car-finishing products. Jegs and Indy Gear also provide associate support. Chuck's team is rounded out by his wife, Michelle; Tim Ratcliff; "Big D" (Darren); and Grant Breaud.

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HIS AIM

With a little help from his friends, artisan builds cool Second-gen in his home garage

❖ TEXT: **Ro McGonegal** | PHOTOS: **Robert McGaffin**

RIDES

▶ **Jim Stehlin doesn't work** per se, rather he crafts. He derives his livelihood from building custom-made cabinetry. Wood is the naturally occurring medium and simultaneously reflects the past and the immediate present. It is comforting to the eye, soothing to the psyche. The key is that the material is intrinsically beautiful and that Jim's expertise reveals the warmth in its luster and grain. He simply carried this deeply rooted emotion over to the mechanical, hands-on side and ganged it with a penchant for creating one-of-one components.



IS TRUE



"I really like second-gen Camaros, and I built this one to drive and race," he said during an interview from his home in Batavia, Illinois. "Most of the cars I could afford needed to be fixed up so I had to learn to fix them. I had some help from friends and family but I did most of the work myself."

His cousin came across this unloved 1973 in Missouri, but before that it had marinated for a while in an Arkansas mud bog. Certainly, it was a physical and psychological rust pit. "It almost wasn't worth rebuilding; however, there were so many new parts available that I was able to go ahead with it. I started the project 7 years ago. I built a rotisserie from scratch and put the Camaro on it. I replaced the floors front-to-back and put in new subframe rails, rocker panels, quarter-panels, and upper cowl. I also installed the roof from a 1979 T-top Camaro and custom-fitted the DSE suspension system." Then the car went into hibernation for 5 years. Huh.



Concurrently, Jim was running his 1968 Camaro. When he wrecked it at the 2013 Holley LS Fest, he climbed back on the '73 the next day. Over the winter, he finished the sheetmetal and mechanicals off, did everything except the interior and the paint treatment on the hood. We asked what was the most aggravating part of the project. "The most challenging would be the lack of tools to make the build easier."

Jim channeled his aesthetic grace to a variety of areas: He built the one-off custom Arrow and the ground effects pieces, but said that Randy Johnson of D&Z Customs in West Bend, Wisconsin, is responsible for the front spoiler and air splitter. Now here's something out of the ordinary: Jim assembled the Anvil carbon-fiber clip (yes, nose, fenders,





and hood) and went to work on it, infusing the hood flat with a custom aluminum heat extractor.

On the inside of the F-body, Jim continued his performance. He custom-made the upper and lower dash, all the interior panels, and integrated an aluminum center console of his own device. Marquez Design furnished the fiberglass door panels that Jim dissected and revamped somewhat to accept the stereo speakers. Eventually, Riggs Brothers Auto Tops & Interiors upholstered all the panels to match the stuff hugging the Corbeau buckets and the bench perch.

Since the '73 would be doubling as a competition car, Jim gained the rigidity that was relinquished by the T-top operation from a 10-point

rollcage that he built from lengths of mild steel. Adjunct to it, he put up a DSE hydroformed subframe and custom-made subframe connectors. He anchored the front suspension with C6 Corvette spindles, directed by rack steering, and fronted them with RideTech triple-adjustable coilovers and a DSE antisway bar. He continued at the back of the car, installing a 9-inch in the familiar DSE QUADRALink cradle along with the RideTech coilover damping equipment.

As for the running gear, we're delighted that Jim continued with the do-it-yourself discipline. A six-speed manual transmission and a twin-disc clutch assembly are perfect for wrenching the most out of the Wegner Motorsports 416-cubic-inch

LS3 – no overbore, just a hairy Callies Compstar crankshaft with a 4.00 inch stroke. Our chat with Casey Wegner was enlightening. He cautioned that all their engine dyno proofing is done with a Wegner accessory drive intact, so output is typically 25-30 hp less than what an unencumbered block might produce. (In the day, Detroit used to dyno its engines and rate horsepower and torque without the parasitic drag of accessories.) You'll also notice that two critical valvetrain links, the rocker arms and roller lifters, are original equipment, mainly because the stuff behaves very well under stress.

Regardless of what else the Camaro might be saying to you, its most outstanding visual features are doubtless the red hash marks on the



fenders and its mondo rim and tire combination. Tens and twelves are bitchin and who could argue with back wheels that are more than a foot deep? They are the drivers, the viable foils for the Sherwin-Williams Metallic Green. Jim did all the bodywork and applied the paint, but had someone else finish up with the clearcoats as well as the final wet-sanding. The final carbon-fiber 3M wrap was done by Greg at

Sticker Dude in McHenry, Illinois.

"There are so many custom things done to this car that it is overwhelming to list them all," said Jim. When he's in line at an autocross exhibition we wonder if he's thinking about that, all that waiting to come to life as he pushes the big red Start button and hears the pipes barking mellifluous but urgent. Then it's lights out, Chief. **CHP**

TECH CHECK

Owner: Jim Stehlin, Batavia, Illinois
Vehicle: 1973 Camaro

Engine

- **Type:** LS3
- **Displacement:** 416 ci
- **Compression Ratio:** 10.8:1
- **Bore:** 4.06 inches
- **Stroke:** 4.00 inches
- **Cylinder Heads:** LSA, CNC-ported, Manley 2.165/1.590 valves, 69cc combustion chambers
- **Rotating Assembly:** Callies Compstar crankshaft and H-beam connecting rods, 10.8:1 Mahle pistons, Total Seal ring packs
- **Valvetrain:** OE 1.7:1 rocker arms w/ COMP trunnion kit, Trend pushrods, PST springs, OE lifters, Wegner rocker covers
- **Camshaft:** Bullet (specs proprietary)
- **Induction:** FAST LSX intake manifold, 102mm throttle body, Spectre air cleaner, Rick's Stainless Vaporworks fuel tank
- **Ignition:** Phantom Works
- **Exhaust:** Stainless Works headers with 1 7/8-inch primaries and 3-inch collectors, Stainless Works exhaust system kit and mufflers
- **Ancillaries:** Wegner Motorsports accessory drive, C&R radiator
- **Output (at wheels):** 465 hp at 5,900 rpm, 435 lb-ft at 4,600 rpm
- **Machine Work:** Wegner Motorsports (Markesan, Wisconsin)
- **Built By:** Wegner Motorsports

Drivetrain

- **Transmission:** Tremec T-56 Magnum, Centerforce flywheel and twin-disc clutch assembly
- **Rear Axle:** 9-inch, 3.73:1 gears, limited-slip differential

Chassis

- **Front Suspension:** DSE hydroformed subframe, C6 spindles, RideTech triple-adjustable coilovers, DSE antisway bar
- **Rear Suspension:** DSE QUADRALink, RideTech triple-adjustable coilovers, DSE antisway bar, custom subframe connectors
- **Brakes:** Wilwood vented 13-inch rotors, six-piston callipers, front; Wilwood 12-inch rotors, one-piston callipers, rear; Wilwood master cylinder w/ manual booster

Wheels & Tires

- **Wheels:** Forgeline DS3 18x10.5 front, 18x12.5 rear
- **Tires:** BFG g-Force Rival 315/30 front, 335/30 rear

Interior

- **Upholstery:** Riggs Brothers Auto Tops & Interiors (St. Charles, Illinois)
- **Material:** Faux leather
- **Seats:** Corbeau LG1, RideTech five-point harness
- **Steering:** Rack-and-pinion, ididit column, Driven wheel
- **Shifter:** Big Red
- **Dash:** Custom-built by Jim Stehlin, insert: aluminum w/ vinyl covering
- **Instrumentation:** Auto Meter
- **Audio:** Alpine head unit w/ navigation, Hertz Mille 6-inch front speakers and Hi-Energy 10-inch subwoofer
- **HVAC:** Vintage Air

Exterior

- **Bodywork:** Jim Stehlin, including ground effects and arrow, T-top roof from 1979 Camaro, Marquez Designs taillights
- **Paint By:** Jim Stehlin
- **Paint:** Sherwin-Williams Metallic Green
- **Hood:** Anvil carbon-fiber
- **Bumpers:** Fiberglass front and rear

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15 WAYS TO MORE POWER

From spark to exhaust, we examine easy ways to increase performance without removing the engine

❖ TEXT & PHOTOS: **Barry Kluczyk**

Legend has it that 30 seconds after Nikolaus Otto, the German engineer credited with developing the conventional four-stroke internal-combustion engine, successfully demonstrated his invention, his buddy Deiter – who was reportedly wearing a “Der Edelbrock” patch on his oil-stained lederhosen – asked: “Can you maken zee engine mit more horsepower?”

And so it began – the eternal quest for higher performance. If you’re even only a passive enthusiast, you know that at its core, Otto’s world-changing contribution to modern civilization is an air pump. The more air that it can process, the more power the engine can make.

We qualified that description with the word “can,” because capability and fulfillment are two different things. There are many attributes to engine-performance optimization that limit an engine from fulfilling its full capability. Some of the limitations are driven by an engine’s specifications, such as its displacement, while others are driven by factors such as excessive friction or restrictions that rob horsepower.

Polling 100 different engine builders would return 100 different opinions for maximizing performance, but there are some long-established and proven methods for reducing internal losses in the engine to make the most of what it has to offer. For this story, we’ve outlined 15 of the tips and tricks that through our experiences have shown to be the most effective for enhancing

performance relatively easily and cost-effectively.

Of course, options such as power-adders and stroker combinations deliver huge gains, but we gave this story parameters that limited the recommendations to non-power-adders such as supercharging and/or nitrous oxide, and changes that didn’t require removal of the engine for upgrades. That meant no stroker kits or anything like that.

With those parameters, we’ve come up with a strong list for the do-it-yourselfer, even though some of the recommendations are more involved than others. The bottom line is there is horsepower hiding under the valve covers of your Chevy’s engine. You’ve just got to dig them out! **CHP**





IGNITION OPTIMIZATION

As Bruce Springsteen said, you can't start a fire without a spark. It's the very essence of combustion, so the strongest, most effective spark that can be generated in the combustion chamber will help make more horsepower. If you've got an older engine without a GM HEI (high energy ignition) distributor, make the conversion. You'll also want to consider a hotter ignition coil or even a supplemental ignition box like the venerable MSD 6A-type to pick up the HEI's known slack at higher rpm. And here's a tip for those running an LS engine: Unless you're nearing the 1,000-horsepower level, there's no need to change the stock ignition coils. They're good as-is.



PLUGGED IN

It sounds almost beyond basic, but don't take your spark plugs for granted. For one thing, the gap should be checked to ensure it is optimal. If you've upgraded the ignition system, for example, with a hotter coil or an MSD box, you will probably want to increase the gap a bit. MSD says that a typical gap of 0.028-inch can be increased to about 0.032-0.034-inch. You may also want to go with a plug with a colder heat range, too, which helps pull heat away from the firing tip faster and prevent power-killing problems such as detonation. The rule of thumb is one heat range colder for every 75-100 horsepower you add.



TIMING IS EVERYTHING

If you've never experimented with ignition timing adjustments, grab yourself a timing light and dig in. Even minor adjustments can pay big dividends in real-world performance, especially if you've performed the ignition upgrades noted previously. And if you commit your car to a strict diet of premium gas, you can see significant horsepower gains by advancing the spark. Give it a try and push the timing in 1- or 2-degree increments. If you get to the point of detonation, you've gone too far and need to back it off a couple of degrees. No big whoop. This is the perfect complement to the optimized ignition system.



FAN-TASTIC IDEA

This is an oldie but a goodie when it comes to releasing pent-up horsepower: Remove the factory engine-driven fan and replace it with an electric cooling fan system. The change relieves the engine of a source of parasitic drag, which costs horsepower. Even an engine-driven clutch fan can turn at about 30 percent of the water pump speed when not in use, so getting rid of the engine fan altogether enhances performance. It also contributes to longer water pump life. Admittedly, the performance gain is not akin to dropping a big blue bottle of nitrous in the trunk, but every little bit helps – and dual-fan setups can provide better cooling capability for a hotter engine.



GO VORTEC

To be honest, factory small-block heads used up to the mid-1990s weren't great. They were OK for making up to about 300-350 horsepower, but offered about zilch in high-rpm airflow. That changed with the Vortec heads developed for GM's truck engines. Their kidney bean-shaped "fast burn" combustion chamber design was efficient and the port design, while optimized for lower-rpm torque, offered surprisingly good high-rpm airflow, relatively speaking. If you want more than 350 horsepower from your 350 small-block, they're the way to go. They're cheap, too, in factory iron versions.

15 Ways to More Power



WEIGHT-LOSS PLAN

This tip isn't so much about extracting more power from your Chevy's engine, but reducing its weight to help improve the launch and overall performance characteristics of the vehicle. By changing over to aluminum cylinder heads and an aluminum intake manifold, you can remove 50-60 pounds off the nose of your car, which helps significantly with weight transfer under acceleration – more so when you're talking about a big-block. Sure, aluminum heads are more expensive, but not prohibitively so. It's a smart investment if you're not willing to bypass the Krispy Kreme on the way to work each day.



PORTING FOR POWER

Another tried-and-true power-building technique is porting the cylinder heads, which involves enlarging the intake and/or exhaust ports to increase their airflow capacity. It can also involve smoothing the passages or removing cast-in impediments to airflow, as well as working the bowl area of the combustion chamber. It's a job that can be tackled at home by the novice, but you'll want to consult an expert or two before grinding away, because removing too much material or removing it in the wrong place can cost horsepower. In fact, if you're working with rectangular port big-block heads, you probably don't need to touch the already large intake ports. Focus on the exhaust ports. Do your homework first or trust the job to a professional.



MORE SQUEEZE PLEASE

While you've got the heads off the engine, you might as well have them milled a couple of hundredths to not only ensure they're warp-free, but also provide a smidge more compression that contributes to higher horsepower. A full point rise in compression ratio will typically net a 5 percent horsepower increase. That works out to an approximately 0.040-inch flat-mill of the deck surface – and that's aggressive. Generally speaking, go with something like a 0.020- or 0.025-inch spec to ensure an adequately thick deck and adequate piston-to-valve clearance. If it looks like there's sufficient piston-to-valve clearance, you can complement the cut with a thinner head gasket to make up the difference and get closer to the full point increase in compression.



GO BIG

With heads still off the engine, you may also want to consider having the heads machined to accept larger valves, which allow more air to flow in and out of the combustion chamber. For the small-block, 2.020- or even 2.055-inch intake valves and 1.550-inch exhaust valves do the trick, while those big-block rectangular-port heads for example, benefit from 2.250-inch intake and 1.880-inch exhaust valves. Don't skimp on the valves themselves, either. Get the good, stainless parts. If it were us spending your money, however, we'd probably just suck it up and buy a set of already ported aluminum heads that also had larger valves, so you could just pull them out of the box and bolt them on the engine.

MATCHED SET

Whether you've had the heads ported – and especially if you have – port-matching them with the intake manifold helps ensure smooth, uninterrupted airflow from the intake into the heads. It's a trickier job than it sounds, because of the casting variances for the different components involved, but when done correctly, it's a machining detail that can really help optimize the velocity of the air/fuel charge for greater performance. On the quick and cheap, you can also trim the intake manifold gasket to ensure none of its material blocks the edges of the intake ports on the heads, which would restrict airflow or cause unwanted turbulence in the head.



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15 Ways to More Power



ROCKERS AND ROLLING

One of the easiest and most cost-effective ways to reduce engine friction to free up horsepower is replacing the stock, stamped steel rocker arms with lightweight, aluminum roller rocker arms. There has been more than a little controversy about whether a rocker arm with only a roller tip is worth the investment, given the relatively modest effect on performance it delivers. The LS engine family, for example, use non-roller-tip rockers, but with roller fulcrums. The upgrade you really want is a set of rocker arms with roller tips and roller-type fulcrums. And since you're spending money, get the aluminum-body rockers, too, which help reduce weight on the valvetrain, which can be worth a few rpm. Get them with a higher ratio, as well, such as 1.6 vs. 1.5, which effectively provides more valve lift for greater performance.



BELIEVE IN BEEHIVES

Another learning from LS engines is the high-rpm advantage that comes with beehive-type valvesprings. Companies such as COMP Cams and even Chevrolet Performance offer beehive conversion kits and the advantages are clear: They offer greater valvetrain stability and a much lighter valvetrain. That's achieved with less spring pressure with better valve control and reduced weight of both the spring and retainer. That means the engine can rev higher more safely, allowing, say, a small-block with a good-flowing ported head to rev into LS territory and make comparable power. It's an upgrade you should strongly consider when you've got the heads off your engine.



CAMSHAFT CONSIDERATIONS

We couldn't get through a list of basic performance upgrades and not mention the camshaft. The thing is, it would be impossible to recommend one grind or another, because every engine and use is different. We'll say, however, that it's an upgrade that can be done in most cases with the engine still in the vehicle and it's one that can deliver a tremendous difference in performance, as long as it's selected properly. In short, don't guess with a new cam. Talk to one of the cam companies' tech lines and tell them the parameters and planned use for the engine, because if you get it wrong, the new cam will flat-out kill performance and/or driveability. One more thing: If you're using the engine primarily on the street, you want a hydraulic roller cam.



THE ROLLER TIP IS HIP

The significant reduction in friction and benefit to long-term durability delivered by roller-tip lifters makes the change to a roller-style camshaft all the more important. The reduction in friction over an old-school flat tappet-style camshaft system builds real horsepower. Surprisingly, factory roller engines didn't appear in Chevy cars until the late 1980s and in the 1990s for some trucks – and that was only the small-block, so there are plenty of enthusiasts rolling around out there without a roller engine. The 1987-later SBC block casting has provisions for the roller cam and the “spider” used with the roller-tip lifters, but earlier engines can be converted relatively easy, but at a generally higher cost, because of some additional components required to keep the camshaft from “walking” in the block. You'll need an appropriate valvetrain, too, so it's a good excuse to pop for those beehive springs mentioned earlier.

GET EXHAUSTED ... WHEN IT'S TIME

Here's the requisite advice about using freer-flowing headers in place of the heavy, restrictive factory exhaust manifolds. It's legit, too, because if you've made enhancements to push more air through the engine, you'll need to get it out quickly. However, it's not necessarily an upgrade you need to make immediately, because the cost/benefit ratio for headers on later-model vehicles such as fourth- and fifth-gen Camaros and C5, C6, and C7 Corvettes doesn't really become positive until a number of other mods have been made first. Those later-model vehicles have comparatively efficient factory exhaust systems so the bang for the buck isn't realized until you've done a camshaft, freer-flowing heads, etc. The manifolds on earlier cars, however, were restrictive logs, so don't worry about ditching them. The sooner the better, too.



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CHECK

Tim Lee checks another one off his list with this 1967 Camaro

❖ TEXT: **Steven Rupp** | PHOTOS: **Robert McGaffin**



RIDES

► **Tim Lee has owned** a lot of hot rods over the years. Everything from a 1965 Buick with a Grand National engine to a Tri-Five Chevy and a stack of Corvairs, but one car still on his bucket list was a first-gen Camaro. The main impediments to Tim getting one was that the examples done right weren't to his taste, and the project cars were either too beat down or priced too high. One day Tim was walking through a local body shop when he spied what appeared to be most of a 1967 Camaro languishing in the corner. It was partially assembled and in primer, but it looked to be in good shape. After talking with the shop owner, he found out that it had a ton of parts lying around and it was for sale. Turned out, the owner abandoned the project after most of the metalwork had been done and he just wanted to be rid of it. Before long, the Camaro and its sizable stack of parts were sitting in Tim's shop: Don Lee Auto in Rancho Cucamonga, California.



KMATE





The Camaro came with a lot of good stuff, such as a stock LS1 engine, T-56 six-speed, and an aftermarket front subframe, so Tim thought all he had to do was assemble the various bits. Well, we all know that plans can fall apart at some point. Before long the LS1 was moved to another project and Tim was building a stroked 416ci LS3. Starting with a stock Chevrolet Performance 6.2L block, Tim added a 4-inch-stroke Eagle forged crank and a set of their H-beam rods. Fully coated Mahle PowerPak pistons yielded an 11:1 compression ratio which, for an LS engine, is downright pump-gas friendly, even in California. For heads, he chose RHS 232cc aluminum pieces paired up with a complete COMP valvetrain. To simplify things, Tim tossed the idea of EFI and instead topped the engine off with an Edelbrock single-plane Super Victor LS intake and a Holley Ultra HP 850-cfm carburetor. Tim grew up tinkering with carbs, so for him this was easier than punching keys on a laptop. An MSD 6LS sends spark to the eight Granatelli coil packs while Holley valve covers and an F-body GM pan keeps the oil where it belongs. It's a combo good enough for 617 horsepower and 553 lb-ft of twist.

Backing up the engine is a Tremec T-56 fitted with a Centerforce DYAD clutch. Power spins rearward through a 3.5-inch Inland Empire Driveline driveshaft and into a Currie 9-inch rear with Detroit Truetrac posi and 3.91 gears.

With the suspension in pieces, Tim was able to sort it all out, get it powdercoated, and on the car. The rack-and-pinion-equipped subframe up front

and four-link rear really helps the Camaro ride nice and carve corners. Surrounding the four-wheel Wilwood disc brake system is a set of Forgeline GA3-6 18-inch, three-piece forged wheels wrapped in Bridgestone Potenza rubber.

Tim wanted the interior to be classic, yet updated, so he picked up an interior kit from TMI and sent the car over to Paul's Auto Trim (Ontario, California) to have it all put in place. The TMI foam and cover kits transformed the stock front and rear seat frames into modern, bolstered seats that actually hold you in place. Tim also wanted to retain the stock dash layout but needed more than the "idiot lights" that resided in the OE dash. His solution was to run one of the VHX systems from Dakota Digital.





This enabled him to retain the OE bezel and still get a full complement of gauges. For a bit of safety, there's a bolt-in stainless Tiger Cage, while a host of billet bits from Eddie Motorsports incorporates additional style.

Keeping with the updated classic theme, Tim rolled with an original GM color: Axalta's 1967 Marina Blue. Paul Smoot (Upland, California) did the final bodywork and shot the two-stage paint that was eventually rubbed out to perfection. Other than deleting emblems, there are no body mods since Tim liked the way GM did it the first time.

The Camaro took just over a year to put together with his son Kevin, and Tim loves how the project turned out. He recently got the chance to run it at a local autocross and he reports that the handling was much better than he expected. He's even had the F-body out to the local dragstrip where it ran 11.92 e.t. at 124 mph. Impressive times considering it was on radial street tires. But mostly Tim just enjoys driving the Camaro around town and is happy that one more car can be checked off of his bucket list. **CHP**

TECH CHECK

Owner: Tim and Crystal Lee, Upland, California
Vehicle: 1967 Camaro

Engine

- **Type:** LS3 6.2L aluminum block
- **Displacement:** 416 ci
- **Compression Ratio:** 11.0:1
- **Bore:** 4.070 inches
- **Stroke:** 4.00 inches
- **Cylinder Heads:** RHS 232cc, 2.055/1.600-inch valves, 68cc combustion chambers
- **Rotating Assembly:** Eagle 4340 forged crankshaft and connecting rods, Mahle pistons
- **Valvetrain:** ARP studs, COMP Magnum pushrods, hydraulic lifters, and Ultra Gold rockers
- **Camshaft:** COMP XER hydraulic (238/240-deg. duration at 0.050; 0.605/0.609-inch lift) and single-roller timing chain
- **Induction:** Edelbrock Super Victor manifold, Holley Ultra HP 850-cfm carburetor, Aeromotive pump and filter

- **Ignition:** MSD 6LS box, Granatelli Motor Sports coils and 8mm wires
- **Exhaust:** Dynatech ceramic-coated 1 7/8-inch headers, 2.5-inch stainless exhaust
- **Ancillaries:** GM F-body oil pan, Melling oil pump, Holley valve covers, CBM billet F-body pulley system and solid tensioner, AFCO two-pass radiator, single electric fan, Energy poly engine mounts
- **Output (est. at flywheel):** 617 hp at 6,500 rpm, 553 lb-ft at 5,200 rpm
- **Machine Work:** Rancho Machine
- **Built By:** Tim and Kevin Lee

Drivetrain

- **Transmission:** 2000 T-56 six-speed, Centerforce DYAD twin-disc clutch
- **Rear Axle:** 9-inch, 3.91 gears, Currie axles, Eaton limited-slip differential, Inland Empire aluminum driveshaft

Chassis

- **Front Suspension:** TCI Engineering subframe with rack-and-pinion steering, tubular control arms, QA1 coilover shocks
- **Rear Suspension:** TCI Engineering four-link, QA1 coilover shocks
- **Brakes:** Wilwood 13-inch vented rotors, four-piston calipers, front; 12-inch rotors, two-piston calipers, rear; Wilwood master cylinder and proportioning valve

Wheels & Tires

- **Wheels:** Forgieline GA3-6 18x8 front, 18x10 rear
- **Tires:** Bridgestone Potenza 255/40 front, 275/40 rear

Interior

- **Upholstery:** Paul's Auto Trim
- **Material:** Vinyl and micro-suede
- **Seats:** TMI

- **Steering:** Rack-and-pinion, tilt-column, Eddie Motorsports wheel
- **Shifter:** Eddie Motorsports stick and ball
- **Instrumentation:** Dakota Digital carbon-fiber in OEM housing
- **HVAC:** Vintage Air Gen IV (to be installed)

Exterior

- **Bodywork & Paint:** Paul Smoot (Upland, California)
- **Paint:** Axalta two-stage Marina Blue
- **Hood:** GM steel cowl
- **Grille:** Ground Up RS with electric door motors
- **Bumpers:** GM with deleted front bumper
- **Door Handles:** Billet Eddie Motorsports
- **Taillights:** Billet Eddie Motorsports with LED lighting
- **Wipers:** Raingear hidden wiper motor system

ATMOSPHERIC RE-ENTRY

Get More Horsepower Out of an LS3 Crate Engine by Installing an Aftermarket Intake

✦ TEXT & PHOTOS: **Steven Rupp**

As hot rodders, our goal for doing anything to our cars falls into two categories: The first are things that makes it look better, and the second are projects that help our Chevys perform better.

Now, “looks better” is a very subjective term. The LS engines from GM suffer from a bad case of clutter, so removing even a little bit of it makes the engine look cleaner and less aesthetically challenged. A good example of this is the factory intake manifold on the LS3. It’s fairly busy, and while the noise-insulating cover is great for creating an ultra-quiet driving experience, it just doesn’t look all that great. It also looks stock, which isn’t what most of us is going for.

Performance isn’t subjective at all. It’s math and physics – all the things we can measure and quantify. That’s where the FAST intake manifold comes in. This polymer piece is optimized to flow a lot of air, and air is power. Even over the LS3 intake, known to be a solid performer, it’s shown to bring

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around 14 horsepower and 11 lb-ft of torque to the party. On a bigger-cubed stroker, the gains would only improve since more displacement means an increased appetite for atmosphere.

And while looks are a matter of taste, I think we can all agree that the FAST intake and fuel logs are just better looking compared to the stock stuff. The nice part is that it’s a simple swap that only requires the most basic of tools. **CHP**



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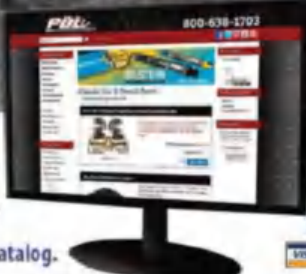
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Atmospheric Re-entry



01 | The stock GM LS3 intake, which came on the Chevrolet Performance crate engine, is a very well-designed part. In fact, of all the various LS intakes this one is hard to beat in terms of performance. Still, there's a bit of power available by going aftermarket. The stocker is also not the best-looking option out there.



02 | The stock intake also has the stock fuel rail. Again, it's not a bad part but not as easy to run -AN lines for fuel. Also, it's not the most attractive part that can be used.



03 | We opted to run the FAST LSXR 102mm intake (PN 146102B). This polymer intake is reported to be worth 14 horsepower on a stock LS3, and the modular design makes it perfect if you want to do any porting. For the more hardcore enthusiast, it has integrated nitrous bungs. It's also 50-state CARB-legal for many late-model GM vehicles. We also like the new black color over the old gray version.



04 | The FAST intake has two locations that can be used to mount the MAP (manifold absolute pressure) sensor. One is up top, just behind the throttle body, and the other is at the rear of the intake. Choose the one that'll work best for your application.



05 | Whichever location you choose for the MAP sensor you will have to do some drilling. The easiest way to keep all the plastic shavings out of the intake is to take it apart off the engine. The two halves are held together with five Allen-head fasteners; two in the front and three on the rear of the intake. You can also see the eight individual runners inside the intake.



06 | We chose the rear mounting location and used a 15/32-inch drill bit to open up the passage. If our MAP sensor had been the grommet style (instead of the O-ring style we had) then we would have used a 3/8-inch bit. A small bolt was included to hold the MAP sensor in place once installed. It's also easier to clean up if you pulled the last runner out (T20 Torx bit).

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Atmospheric Re-entry



07 | The vacuum port that comes with the intake is perfect if you want to use a hose and hose clamp. But if you want to run the factory-style “clip on” hose, then you’ll need to do some modifications. The first step was cutting off the smooth nipple.



08 | You’ll then need to drill out the hole using progressively larger drill bits (5/16-, followed by 3/8-, 7/16-, and finally 31/64-inch). The O-ringed factory-style vacuum nipple is installed using the two self-tapping Phillips head screws included in the kit.



09 | With the drilling done, it was time to reassemble the intake. A small amount of RTV is needed in the back corner of the intake to ensure an airtight seal. When installing the shell on the base, make sure the two halves seat together correctly. Failure to do this can end up cracking your intake. Install the five fasteners and tighten them (with blue thread locker) to 70-89 in-lb. Once done, flip the intake upside down and install the three self-adhesive rubber bumpers inside the three circles.



10 | The FAST LS3 intake doesn’t include intake gaskets, so you’ll need to steal them from the stock LS3 intake or buy some replacements from GM (PN 19256623 and just over \$40 from Improved Racing).



11 | The 10 valley cover bolts need to be replaced with the button-head cap screws provided with the FAST intake. If you want to use a few nicer-looking bolts, like those from ARP, then there are three locations where they won’t cause interference with the intake: each side of the rear oil pressure tower and front corner. You may also need to modify (fancy word for bend it a bit) your coolant crossover tube or replace it with GM part number 12602544.



12 | We then gave the O-rings on the LS3 fuel injectors a very light rub of oil and slid them into the FAST intake. If you want to use the factory fuel rail, you’ll need the adapter kit (PN 146025-KIT) from FAST.



13 | We opted for FAST’s billet fuel log kit (PN 146027-KIT), which came with the right –AN fittings for all four ends. The fuel logs are also available in black (PN 146027B-KIT).



14 | Remember that nipple bung we drilled out earlier? Well, with the intake installed we could then clip on our GM vacuum hose.



15 | And just like that we were done. It certainly looks better, and we won’t mind the few extra horsepower that will be freed up.

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TOP 11 CHEVY MUSCLE

The Chevy High Staff and Our Readers Nail Down Their Favorite Rides of 2015

♦ TEXT: Nick Licata

♦♦ **After a year** of featuring some of the most amazing, beautiful, fast, and influential muscle cars in the nation, we here at *Chevy High Performance* are at the point in the year where we break down all those remarkable cars and give recognition to the 11 best of 2015. Unfortunately, no one wins a prize for making the list, but we do offer a little extra notoriety by giving the car and owner one more moment in the limelight.

So, if you are asking how one goes about deciding which cars make the list, rest assured there were neither bribes by any car owners offering free rides to the editors nor did cash exchange hands. It's also important to point out that the amount of money spent on the car had no influence, either. (We don't have access to that information, anyway.) So in order to make this subjective list, the editorial staff started off by picking their favorite 20 cars. And let me tell you, just breaking it down to that number was a daunting task that caused some extended discussions between staffers before we could all come to agreement. From there we took those 20 and went to our social media sites (Facebook, Instagram, Twitter, and Google+) to pull out the cars that got the most engagement and positive comments. So although the list is purely subjective, it wasn't 100 percent decided by the editorial staff, either. Our readers and social media followers were

part of the decision-making process.

So without further ado, and in order of appearance throughout the year, we are proud to bring you the *Chevy High Performance* Top 11 Muscle Cars of 2015.

Why 11? Why not? If 10 is good, then 11 must be better, right? Besides we found it too difficult to break the list down to just 10.

You'll find full features, including web-exclusive images of all these rides, at chevyhiperformance.com.

We hope you agree with the choices of cars on the list, but if you think we missed the mark, feel free to email us at chevyhiperformance@enthusiastnetwork.com to let us know if one of your favorite cars of 2015 didn't make the list. **CHP**



♦ CAR: 1972 NOVA ♦ OWNER: AL MCALONEY ♦ ISSUE: JANUARY 2015 ♦ PHOTOGRAPHER: ERIC MCCLELLAN

Word has it that Pro Street's not dead. Sounds like a cool saying for a T-shirt, but the reality is that Pro Street really isn't dead. What's actually happened is that today, guys can build big-horsepower cars and actually drive them on the street. That's exactly what Al McAloney did with his '72 Nova. Al went nuts and stuffed in a 565ci Rat engine that makes 900 hp at 7,200 rpm and 704 lb-ft at 5,700 rpm on pump gas (no e.t. to report just yet, but the horsepower-to-weight ratio indicates low 9's). Those are pretty hefty numbers for a street car, and it's right up our alley. The wheel combo (15x4 front and 15x15 rear) resonate serious business and accomplish the classic Pro Street look. The PPG Deltron Black contributes to the car's sinister personality and the Yenko graphics do a great job of adding in a bit of heritage while breaking up the consistent sea of black.

Congrats to Al for making our Top 11 list.



THE CARS OF THE YEAR

♦ CAR: 1955 CHEVY ♦ OWNER: MIKE HUGHES ♦ ISSUE: FEBRUARY 2015 ♦ PHOTOGRAPHER: TOMMY LEE BYRD

Mike Hughes has been digging Tri-Fives since his high school days, and the constant visions of the '55 stayed on his list as one to build as a hot rod. Browsing through the local paper in 2003, he came across a nice specimen, which he later realized was actually owned by his neighbor back in the '60s. Small world, eh? Back then it was powered by a six-cylinder — a far cry from what it is today. It's now motivated by a Ram Jet 350. Although fuel injection didn't appear until 1957, Mike liked the look of an old-school fuelie and built his small-block with a modern Ram Jet manifold disguised as an "OG" Rochester unit. Although that's a very cool aspect of the build, the multiple layers of meticulously sprayed PPG 9300 Concept Black puts the car in a class all its own. Mike credits the crew at Precision Rod & Custom in Sevierville, Tennessee, for the exterior's flawless appearance. We here at *CHP* like our muscle cars in a variety of styles, and Mike's '55 is a great representation of vintage cool, and those 15-inch American Torq-Thrust wheels wrapped in BFG Radial T/A rubber takes the cake. This is a solid player in our Top 11 list.



♦ CAR: 1966 CORVETTE ♦ OWNER: HAROLD STAMEY ♦ ISSUE: FEBRUARY 2015 ♦ PHOTOGRAPHER: ROBERT MCGAFFIN

Generally speaking, Corvette owners are a different breed when it comes to their beloved C-series, factory-built rides. They don't much care for messing with what GM baked from the factory. Harold Stamey, Jr. could give a hoot about all that, but to his defense, he took over this C2 when it was half cooked, anyway. Harold had been following the progress of this car as it was being built at Norm's Rod Shop in Conyers, Georgia. The owner wanted to sell mid-build and Norm offered Harold first dibs. Harold took it from there and let Norm continue on doing his magic.

The car rides on a Morrison chassis and is motivated by a ZZ502 crate engine topped with a very cool electronic Hilborn port fuel injection system. The Vette rolls on Boyd SOB (Spirit of Boyd) wheels (17x7 and 20x11) wrapped in 225/40 and 295/45 BFG KDW rubber.

Harold's ride may not be in with the Bloomington Gold crowd but it hit a nerve with us and our social media following, which made it good enough for our Top 11 list.



♦ CAR: 1969 CAMARO ♦ OWNER: DONNA HILLIARD ♦ ISSUE: MARCH 2015 ♦ PHOTOGRAPHER: ROBERT MCGAFFIN



Donna Hilliard got the bug for wanting a muscle car when the Camaro made a welcomed re-appearance back in 2009 with the 2010 model. Her sights were set on owning a late-model muscle car, but her husband, Jay, being a proud owner of a 1969 Camaro himself, talked Donna into letting him find and build her a '69 so they could have similar cars. An Internet search revealed a dead-end build that Jay decided would be a good project to take on for Donna. After three and a half years, a lot of sweat equity between Jay and Dan at Holohan's Hot Rod Shop, Donna now has one killer big-block-powered first-gen. The aforementioned Rat engine busts out 526 hp and 518 lb-ft of torque, which is sent down to a TH400 trans and a 12-bolt rearend. Improved handling comes by way of a medley of suspension components from Detroit Speed Inc., Hotchkis, AFCO, Bilstein, and SPC. The ensemble rides on Rushforth rollers (18x8 front, 18x9 rear) wrapped in Nitto NT555 rubber (245/35 front, 275/35 rear) and scrubs off steam with a set of Baer stoppers.

Donna was involved with the build from start to finish so she knows her ride. She enjoys people's expression when they learn it has a big-block and the woman who owns it and drives it knows every detail about the car.

It's simple, gorgeous, and has a big-block – good enough for the cover of the March 2015 issue and our Top 11 list.

♦ CAR: 1955 CHEVY BEL AIR ♦ OWNER: DUSTY COX ♦ ISSUE: APRIL 2015 ♦ PHOTOGRAPHER: GRANT COX

So we're not playing favorites with Tri-Fives, but it just so happens this is the second '55 to make our Top 11 list. Probably coincidence, but we couldn't ignore Dusty Cox's brilliant Bel Air you see here. It went nuts on our social media sites – your comments, likes, and shares made for extensive engagement and big numbers. Yes, it lives on the showie side of what *CHP* covers, but Dusty wheels it hard and has no problem mashing on the skinny pedal when necessary. He and his sons converged on the build for a good six years, which sits on a Roadster Shop chassis equipped with Heidts Pro-G suspension components damped by Aldan adjustable shocks. The family built, Pro Touring-style Chevy is powered by a Chevrolet Performance ZZ572 Rat rated at 620 hp and 650 lb-ft of grunt.

Budnik X-Series Groove hoops (18x8 front, 20x10 rear) and Dunlop Sport Maxx 050 skins (235/45 front, 295/40 rear) provide the rolling stock, while Wilwood devices bring it down from speed.

Dusty sprayed the brilliant red PPG pigment; and being a fan of the original shell, he bucked the trend and left the driprails, door handles, and all of its original ornaments.

It's well-crafted, makes big horsepower, and looks brilliant – three good reasons it made the *Chevy High Performance* Top 11 list.





Chevilles ring loud and clear among the *Chevy High* readers, especially of the late '60s and early '70s vintage. The body lines ooze of muscle car nostalgia and look fast even when sitting stagnant.

Alex Figge (pronounced “figgy”) knew this, and with a background in driving Karts, Indy cars, sports cars for five different manufacturers, and most recently Trophy Trucks, performance runs in his veins. Alex’s appetite for performance and speed led him to the Roadster Shop in Mundelein, Illinois, to expand on his 1970 Chevelle.

RS started with their own Fast Track chassis and set in some tubular control arms enriched with Penske double-adjustable dampers on C6 spindles. Out back it’s a four-bar affair kicked in to accommodate the massive rear meats.

For acceleration, Alex went with a 427ci stroked LS3 with enough muscle to spin the dyno at 635 hp. Power moves through a Centerforce twin-disc clutch and a T-56 Magnum stuck to a Quick Time bellhousing. A Strange 9-inch was fitted with a Truetrac diff and 3.90 gears.

Wilwood binders bring it down from speed and Forgeline SC3C 18x10 and 19x12 rollers support the Michelin Super Sport 295/30 and 345/30 rubber.

Figge’s ride made our June 2015 cover and continues to be a fan favorite on our Facebook page – great credentials to make our Top 11.



For the July 2015 issue we split the cover between two influential cars: a Detroit Speed Inc.-built 1969 Camaro and this beauty built by the trendsetting siblings known as Ringbrothers. Jim and Mike Ring don’t hold back on any build they conjure up, and this 1966 Chevelle is no exception.

Chris McPhie hit up Jim Ring a few years ago and expressed interest in having his '66 go through the full Ringbrothers treatment. So, in 2012, the transformation started when the six-banger was tossed in favor of a monster 417ci LS7 topped with a Whipple twin-screw supercharger. The package belts out 997 hp and 900 lb-ft of torque. Cutting no corners (the Ringbrothers don’t cut corners), the A-body rests on a Roadster Shop chassis that utilizes C6 Corvette suspension up front and a custom four-link out back. Baer 6S six-piston claws bite down on the 14-inch plates.

To explain all the custom body mods would require more space than we have here, but Jim informed us that thousands of hours went into the massaging of this gem (80 hours went into the custom side mirrors alone).

It’s about as far from a budget build as there is, but its popularity online and in print make it a shoe-in for the *Chevy High Performance* Top 11 of 2015 list.





♦ **CAR: 1969 CAMARO** ♦ **OWNER: ANGELO VESPI** ♦ **ISSUE: JULY 2015** ♦ **PHOTOGRAPHER: ROBERT MCGAFFIN**

The second of two cars to appear on the July 2015 cover is this one-of-a-kind 1969 Camaro, which belongs to Angelo Vespi and built by the crew at Detroit Speed Inc. Vespi blames the movie *Better of Dead* as bringing the first-gen Camaro to light. "I've always wanted a first-gen Camaro ever since I saw that movie," remembers Angelo. "The lines of a 1969 are absolutely beautiful – there's just nothing like it on the road today." And there isn't another '69 like this one, either, as Detroit Speed customized, fabricated, and massaged the body with some obvious changes (the quarter-panel gills are now functional and divert air to the rear brakes), and also tied in some subtle nuances that give the appearance of cleaner more attractive lines.



Within a top-notch Pro Touring ride, the heart of it all better meet expectations, and this one absolutely does. A supercharged Mast Motorsports LS7 rated at 803 hp and 706 lb-ft is more than adequate at taking charge. To handle the Camaro's enormous acceleration ability, DSE equipped the F-body with their hydroformed front subframe and QUADRALink rear suspension system, while JRi dampers control the situation and ensure excellent handling for street and track endeavors. Black Rushforth rollers (18x10 front, 19x12.5 rear) are just the prescription to spice up the smooth, white exterior.

Detroit Speed laid it all out on this one, and their efforts scored Angelo's Camaro the 2014 SEMA Battle of the Builders award, which beat out 125 other contenders. We were proud to have the car appear on the July 2015 cover, and with the car's accolades, it's a "no brainer" to make our Top 11 list.

♦ **CAR: 1967 NOVA** ♦ **OWNER: PHIL MITCHELL** ♦ **ISSUE: SEPTEMBER 2015** ♦ **PHOTOGRAPHER: CHRIS SHELTON**

Chris Holstrom is a humble guy, and when Dynomax invited him to bring the 1967 Nova he had recently built for Phil Mitchell to attract attention in their booth at the 2013 SEMA Show, he was honored, and at the same time, a little bit in disbelief. What started out as a casual week of hanging out with the car and answering questions from a few thousand SEMA-goers, turned into a life-changing event. It seems the Nova caught the eye of the folks behind Sony's Gran Turismo Award and nominated it as a finalist for Best in Show. If you think Chris was beyond words just being nominated, imagine his surprise when it actually won Best Hot Rod of SEMA.

The car features a stock LS9 with an injector swap that cranks out 638 hp, Detroit Speed Inc. suspension components, and rolls on Forgeline three-piece RB3C wheels (18x9 front, 19x11.5 rear).



Yes, the Nova carries plenty of custom flavor when you examine the engine bay and interior but Chris left the body almost entirely stock, requiring a minimal effort of prep to attain the flawless skin you see here.

You'll soon be able to play this Chris Holstrom Concepts-built hot rod on Sony's PlayStation, but for now here's another look at one of our Top 11 of 2015.



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♦ **CAR: 1970 NOVA** ♦ **OWNER: GARY GEIGER** ♦ **ISSUE: NOVEMBER 2015** ♦ **PHOTOGRAPHER: ROBERT MCGAFFIN**

Like most of us, Gary Geiger lacks the financial means to have someone build him the hot rod of his dreams, so he spanned a good 14 years to accomplish the build on his terms: slowly and with help from his friends.

Gary found the 1970 Nova in an issue of *Hemmings* and discovered the area code associated in the ad's phone number was the same as his. With just 66,000 miles on the odometer, it was gold-on-gold with a vinyl roof and 307 engine, it was straight as can be with not a spot of rust, and it was just five miles from his house. As a bonus, it was originally a California car.

The changes came gradual, but it now features an iron 447ci Dart small-block mill with NASCAR-exclusive cylinder heads that puts out 630 hp and 590 lb-ft of torque. Underneath, the car features a rebuilt front subframe with DSE subframe clips and AFCO shocks. A QUADRALink resides out back and is accompanied by a Moser 9-inch, which houses 3.89 gears and 35-spline axles. On motor, the car's best time is 10.91 at 121 mph, and on the juice (150 shot), its best elapsed time is 10.16 at 135 mph.

Mark Ross is responsible for the PPG Black pigment and flawless bodywork, while the car's cover appearance on the November 2015 issue and the fact that it lit up our Facebook and Instagram social media pages confirm a spot on our Top 11 list.



♦ **CAR: 1955 210 CHEVY** ♦ **OWNER: RON BLANCHARD** ♦ **ISSUE: DECEMBER 2015** ♦ **PHOTOGRAPHER: TIM SUTTON**

Sometimes you have to take a road less traveled to build something unique. And the reasoning might not be to grab a little extra attention or to stand out in a crowd, but more so because of personal preference. Ron Blanchard grew up in Southern California, a hotbed of early drag racing and hot rodding, and decided to keep some of that history alive with his 1955 210. Sure, we come across all kinds of super cool Tri-Five Chevys, but this one really caught our attention.

Ron was introduced to his project as an altered wheelbase car from back in the day that was in rough shape. With the car seeing better days, Ron was guiltless in regards to chopping up a classic and building it as a gasser.

Ron dropped in a 500hp, 396ci big-block Chevy adorned with a pair of 1965-era Holley 390-cfm carbs sitting atop an Edelbrock TRX2 tunnel-ram intake and bolted on a set of fenderwell headers that pour out plenty of attitude. The velocity stacks and Offenhauser finned-aluminum valve covers ensure the period-correct vibe stays intact.

Being we aren't into faux cracks or recently applied stressed paint designed to replicate 60 years of life, in our book, there's nothing wrong with a beautifully built gasser-style '55 that melts rubber on the street and creates a ton of ruckus at car shows.



We envision Ron's '55 as a Big Daddy Roth-style rendition on a T-shirt, but for now, it gets our attention and a spot on the *Chevy High Performance* Top 11 list.



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VICTORY DANCE

Updating a vintage small-block with a high-tech serpentine drive system

✦ TEXT: **Steven Rupp** | PHOTOS: **Nick Licata**

Besides sending lots of smile-inducing horsepower to your rear tires, the crank also powers all the engine accessories necessary to keep your Chevy rolling down the highway. To do this, power is transferred to the various items such as the alternator, power steering pump, and A/C compressor via a rubber belt. Back when most of our now classic Chevys were new, a simple V-belt was used. It got the job done, but as power levels and technology advanced it was replaced by the multi-rib serpentine belt system. The ribs, in most cases there are six, resisted slipping better than its V-belt ancestor and the serpentine design meant more accessories could be ran on a single belt. Yep, a single belt could run accessories on the driver and passenger side of the engine. It may not sound like a big deal today, but it was quite the leap forward.

Most modern engines, like the LS series, were designed around this system, but for the most part, older small-blocks were stuck in V-belt land. Sure, you could dig up a factory serpentine kit from some wrecked mid-'80's GM car, but they were not guaranteed to fit in the confines of your classic Chevy and are a bit ugly. After all, factory systems were designed to function properly, not win car shows.

Enter the aftermarket. Companies like Concept One came up with a way to imbue old Chevy engines with modern serpentine technology. And they did it with a kit that looks kick-ass, to boot. Hey, sounds like a win/win to us. In addition, their kit incorporates a compact design that easily clears most valve covers, headers, and other engine bay clutter.

To check out the kit we grabbed some Eastwood tools, a Victory series pulley kit, and a small-block we had that was in the queue for an install. **CHP**

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01 | A lot of top-quality parts are packaged in the Concept One Victory Series pulley kit. In addition to all the needed hardware and a host of custom-milled billet brackets, there's an aluminum Edelbrock water pump, Sanden SD-7 A/C compressor, Delphi aluminum power steering pump, Powermaster alternator, and Goodyear Gatorback belt. The kit, in machine finish, runs around \$2,000 and they have finish upgrades like polished, black, and clear anodized.





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Victory Dance



02 | This 350 small-block Chevy is typical of what's under the hood of many hot rods. Originally, it ran a V-belt system, but V-belts tend to slip when the horsepower gets ratcheted up too far. It's also not the best looking way to go. A far better system is one that uses a multi-ribbed serpentine belt. It's functionally better and looks great. Our engine had aluminum heads, but the Concept One system will work on iron-headed engines as well, even ones without accessory boltholes. Just make sure your block has drilled and tapped holes on either side of the harmonic damper.



03 | The balancer can be a simple GM piece or something as high end as this billet piece from Innovators West Inc. (PN 102). It's good for up to 1,000 hp; way more than we will be making, but it's nice to know we have room to expand our power output.



04 | Water leaks are a drag, so we made sure to give all of the water pump studs a nice coating of thread sealant. The four studs were then screwed into the water pump boltholes.



05 | We then slid the rear driver-side accessory bracket in place over the studs.

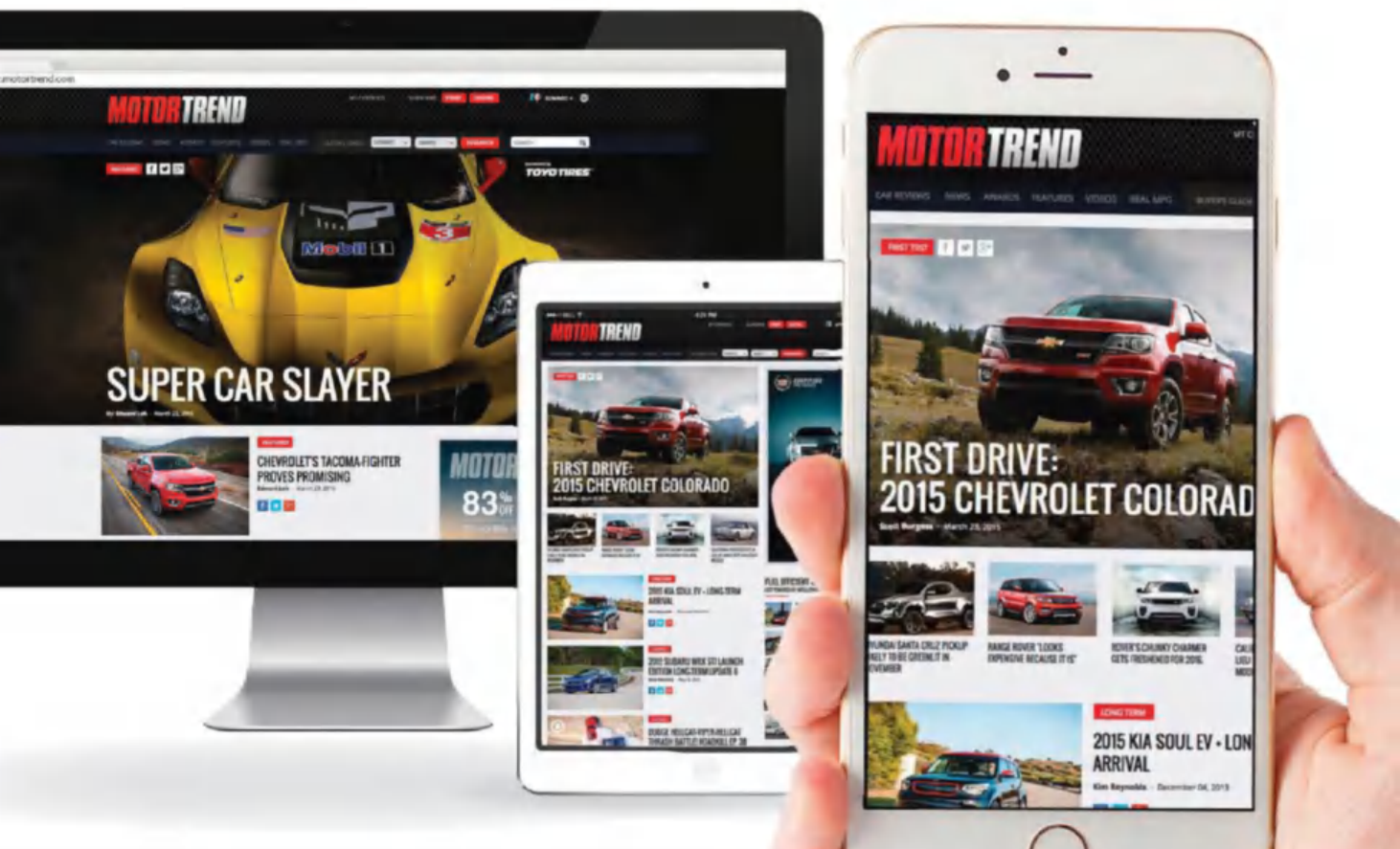


06 | This was followed by the rear A/C compressor bracket, which was secured using the supplied fasteners. We made sure to use a dab of antiseize on any stainless fasteners used.



07 | Next up was installing the included O-rings that will seal up the water pump. Forgetting this step will result in much sadness when you eventually fire the engine.

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Victory Dance

08 | The Edelbrock water pump was next on the list. It simply slid over the four studs we installed earlier.



09 | Three fasteners secured the billet crank pulley to the Innovators West damper.

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10 | The Concept One kit is designed to work with electric cooling fans, but if you need to run a mechanical fan, they can hook you up with a modified water pump pulley. Just keep in mind that the kit uses a reverse-rotation water pump, so make sure the fan is right.



11 | The billet spacer then went onto the back of the aluminum Delphi power steering pump.

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12 | We then mounted the pump/reservoir assembly to the billet bracket using the supplied hardware. Concept One has one of the best-looking reservoirs on the market. You can also see two of the four hex spacers that we installed onto the water pump studs.

13 | It was then time to secure the alternator spacer.



14 | The alternator bracket, along with the polished Powermaster alternator, was then secured to the engine. The kit comes with a 105-amp unit, but for an additional \$50 you can upgrade to one rated at 140 amps.



15 | Once fully locked down, we could toss on the alternator pulley and fan.

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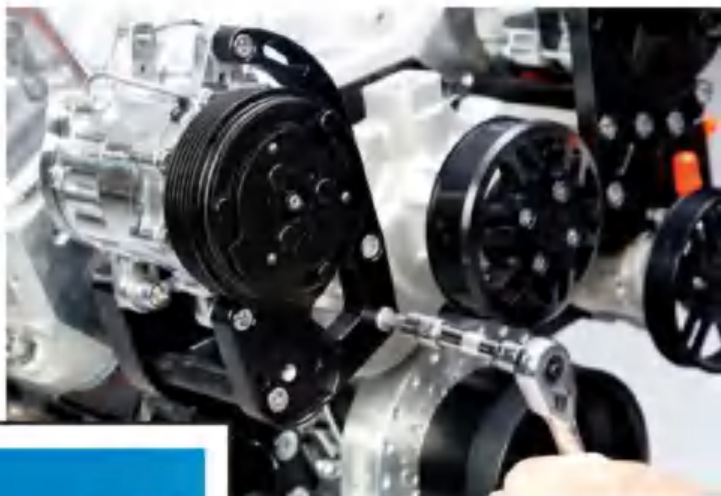
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Victory Dance

16 | Three machine screws secured the power steering pump pulley to the Delphi pump. It was very nice not having to hassle pressing on a traditional pulley.



17 | Using a variety of spacers and fasteners, the polished Sanden A/C compressor was bolted in place.



18 | The kit also included this sweet billet compressor manifold. We really liked how it routed the lines in from the bottom for a clean install.



19 | The manifold was secured with two stainless fasteners. Note that if you won't be installing the A/C soon then you should leave the compressor sealed up and install this when hooking up your system.

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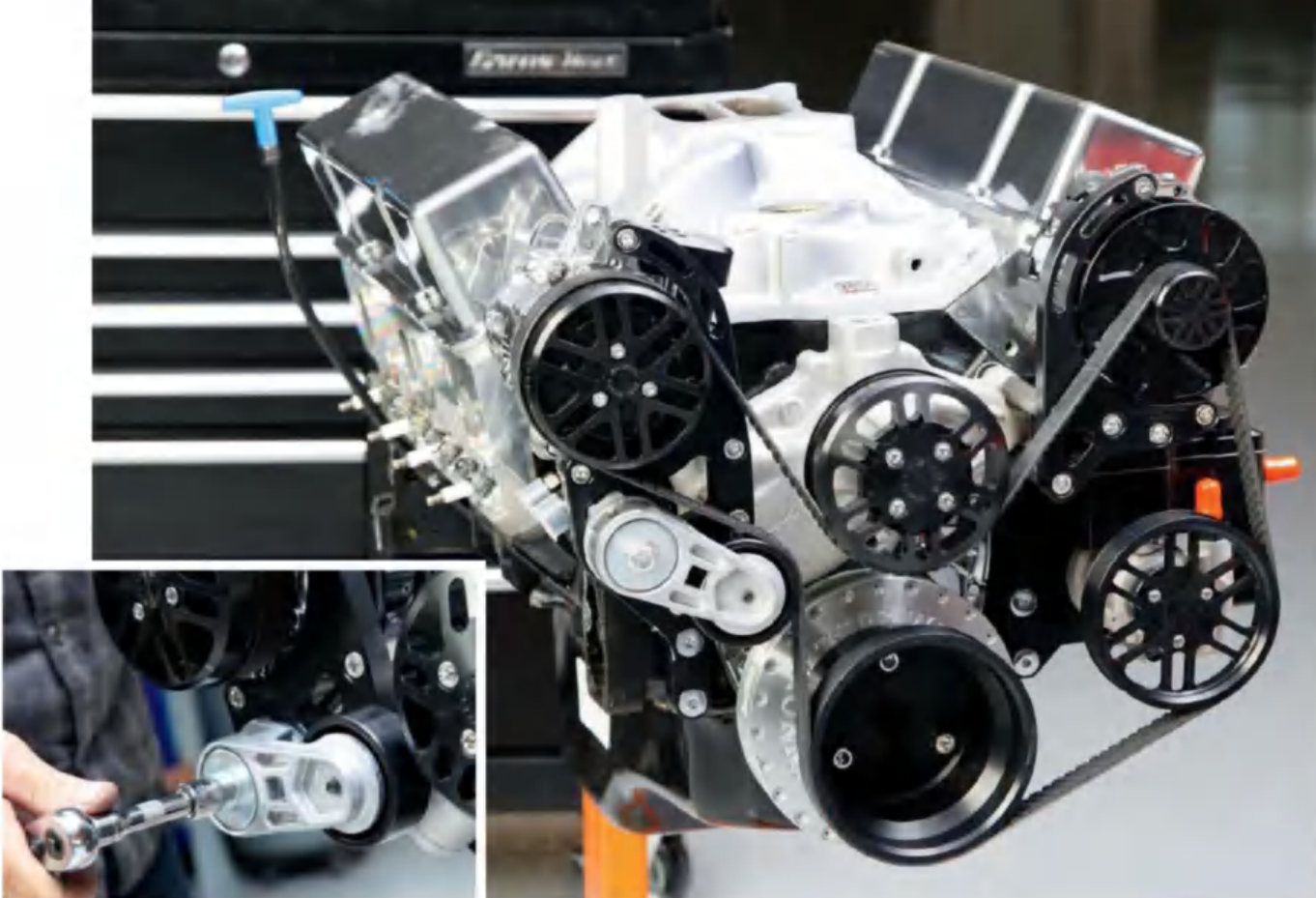
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20 | The Goodyear tensioner was then bolted to the lower area of the large A/C compressor bracket.

21 | After adding the Goodyear belt, we put this project into the "done" category. The install took less than 2 hours and our small-block looks killer and far more updated than it did before.

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Some people say to hell with plans, that spontaneity is the best thing. Shooting first and asking questions later may work in some arenas but when it comes to the time/budget car-building equation, structure and schedule are paramount. David Dittmer knows well how to do this. His business is Green Meadows Lawn & Landscaping, with a big emphasis on the landscaping part, so we checked out his website to familiarize. Landscaping is about moving earth around as well as the stone and wood accompanying for pleasing aesthetics, but it requires planning to bring it off smoothly and in spectacular fashion.

The 35-year-old Dittmer has been doing that for nearly 20 years, so yes, he's a planner who follows his plans. But before all that, his family has been in the car business for nearly 70 years selling and servicing them rather than collecting and restoring them. So the car stuff's likely in his DNA. "When I came across this [Chevelle], I decided it was time to break tradition," David said with a small triumph in his voice.



AS GLASS





As a novice in a brave new world, he found a mentor in Kevin Kaiser, “a man who has grown up around hot rods and knew exactly how to build a one-of-a-kind car,” he opined. “We were instantly on the same page. I’ve owned the car for 10 years and it took five-and-half years to build. My friend Jason Jewett found a 1967 SS in Douglas, Kansas. The legendary Wichita customizer Elden Titus [a contemporary of George Barris and Darryl Starbird] and Bob Notz had chopped the top 4 inches. I thought I was on my way.”

When the car was resting in its new home and after the febrile rush and hurried excitement dissolved, David shook his head like a wet dog and realized just how much work was involved to make it into something he’d be proud of. “My family thought I was crazy. Why didn’t I purchase a restored car? But I wanted to build my own personal hot rod. At this point Jason introduced me to Kevin Kaiser.” He and Dittmer were thick and would confer countless times over the next 60 months.

David assembled the troops: Kevin was the project manager. He smoothed the firewall, fabricated the exhaust, modified the bumpers and dash, and assembled the car. Jason Jewett and Jay Cheever did the bodywork and applied the paint and the graphics. Jerry Heinrich helped with the bodywork and Scott Downey did the interior. “As for the rest of the car,” said David, “We spent many hours in

Kevin’s garage assembling, fitting, and bolting in pieces, one at a time.”

There are several things about David’s Chevelle that stand out in the wilderness of conformity. Where’s that darling LS plant? Nope. David wanted a big-block, with two carburetors, no less. To-the-wall rims and tires? Again, the crew eschewed the biggest things they could shoehorn beneath the sheetmetal and stayed pretty conservative. That sectioned roof is another phenomenon, so subtle and fluid that at first we didn’t pick up on it in Grant Cox’s sleeky slides. But in the rear three-quarter view the altered roof line is quite evident.

Since David’s livelihood necessarily keeps him under the elements and at



nature's mercy, he was disposed to a sanctum that featured cool air, high-def audio, and the ergonomics a high-zoot BMW would envy. The quality of the surroundings also mattered. He went to Wichita where Scott Downey gave the gut a full-court press.

Scott installed the full-on sound system, used Enduratex Soft Vinyl throughout, built the bucket seats, erected the custom console, and laid down yards of black carpeting. He went further, obscuring the speakers, head unit, and everything else that looked out of context. During a 2-month expedition, Bryan Cushenbery hard-wired everything, soldering and shrink-wrapping the connections and covering them with black sheeting to blend with the black paint. Downey finished up the stitchwork detail with a fully upholstered trunk. In all, the Chevelle's cabin seethes quietly with sophistication and understated elegance.

David wanted a distinctive stance for the Chevelle so he gave it a wicked 4-inch slam at both ends, but there are no airbags involved. See how close to the earth those primary pipes really are? For now, at least, curb jumping is out. But in the what-would-you-do differently section of the tech sheet, he responded: "I would have different headers for more ground clearance — something that will be addressed soon." Before we go, David wanted another bit of information to be out. "The car was finished two weeks before our first show. Andrew Holder at Holder's Auto Detailing in Wichita spent 30 hours polishing the car to give it the glass look it has now."

So in the end, David has more than a car he's always wanted; he's become a steward as well, maintaining a piece of history in that top-chopping art that has become a very rare thing these days. **CHP**

TECH CHECK

Owner: David Dittmer, Derby, Kansas
Vehicle: 1967 Chevelle

Engine

- **Type:** 1974 Mark IV 454 block
- **Displacement:** 468 ci
- **Compression Ratio:** 9.0:1
- **Bore:** 4.31 inches
- **Stroke:** 4.00 inches
- **Cylinder Heads:** Brodix Big Brodie, 2.25/1.88 valves, 121cc combustion chambers
- **Rotating Assembly:** GM forged steel crankshaft, Eagle connecting rods, Wiseco pistons
- **Valvetrain:** ARP studs, COMP Magnum pushrods and hydraulic lifters, Billet Specialties rocker covers
- **Camshaft:** COMP XR288HR-10 hydraulic (288/294-deg. duration at 0.050; 0.521/0.540-inch lift), COMP double-roller timing chain, Edelbrock front cover
- **Induction:** Edelbrock Air-Gap manifold and twin 600-cfm Performer carburetors, Aeromotive pump and filter
- **Ignition:** MSD Pro Billet distributor and 6AL box
- **Exhaust:** Hooker Super Comp ceramic-coated, 2-inch primaries, 3-inch mandrel-bent American Muffler aluminized steel pipes, SpinTech Pro Street 6000 mufflers, built by Kevin Kaiser
- **Ancillaries:** Moroso 7-quart oil pan, Melling oil pump, Edelbrock water pump, Powermaster alternator, March Ultra Drive accessory drive, Be Cool radiator
- **Output (est. at flywheel):** 502 hp at 5,400 rpm, 545 lb-ft at 3,400 rpm
- **Machine Work:** Big Mike's Speed and Machine (Wichita, Kansas)
- **Built By:** Big Mike Schill

Drivetrain

- **Transmission:** TCI Turbo 400, valvebody, and flexplate; Neal Chance 3,000-stall converter
- **Rear Axle:** 9-inch, 3.73:1 gears, limited-slip differential, built by Kevin Kaiser and Holzman Race Cars (Wichita, Kansas); Inland Empire Driveline driveshaft

Chassis

- **Front Suspension:** Heidts 2-inch drop spindles, Global West negative-camber control arms and 1 3/8-inch antisway bar, QA1 adjustable coilover shocks

- **Rear Suspension:** Global West lower control arms, adjustable upper links, and 1-inch antisway bar; QA1 coilover shocks with 2-inch drop springs
- **Brakes:** Wilwood 13-inch vented rotors and four-piston calipers, front and rear; Wilwood master cylinder

Wheels & Tires

- **Wheels:** Budnik G5 18x8 front, 19x10 rear
- **Tires:** Goodyear Eagle F1 235/40 front, 275/40 rear

Interior

- **Upholstery:** Scott Downey (Downey's Auto Upholstery, Wichita, Kansas)
- **Material:** Enduratex Soft Vinyl
- **Seats:** Custom-built by Scott Downey, GM seatbelts
- **Steering:** Flaming River quick-ratio box, tilt-column, Budnik G5 wheel
- **Shifter:** TCI Outlaw
- **Dash:** Filled and smoothed, custom instrument panel
- **Instrumentation:** Auto Meter American Muscle
- **Console:** Custom-built by Scott Downey
- **Audio:** Kenwood head unit; CD Kicker 40KX400.4 amp, 41KSS654 6.5-inch front speakers, 41KSC6934 6x9-inch rear speakers, and 11HS8 8-inch subwoofer, installed by Downey's Auto Upholstery
- **HVAC:** Vintage Air Gen IV Magnum

Exterior

- **Bodywork:** Gerald Heinrich, Jason Jewett, Jay Cheever; top chopped 4 inches by (the late) Elden Titus and Bob Notz
- **Paint By:** Jason Jewett, Jay Cheever
- **Paint:** Sherwin-Williams Lexus Thunder Gray Metallic/Deep Black
- **Hood:** Glasstek 4-inch cowl
- **Hood Hinges:** Eddie Motorsports
- **Grille:** Classic Industries (OE type)
- **Bumpers:** Peaked, tucked, shaved bolts, front; original notched for exhaust tips, filled-in back-up lights, shaved bolts, rear

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STOP, DROP, AND CORNER

A Chevy SS gets a lot more performance with a few well-chosen parts

✦ TEXT: **Steven Rupp**

It doesn't really matter how well a new car is built; to us there's always room for improvement. Making good better and better best is just how we're wired. Keep in mind that when GM churns out a performance car like the Chevy SS, their idea of "performance" is quite a bit different from how we perceive it. To a GM engineer it's winding down a mountain road



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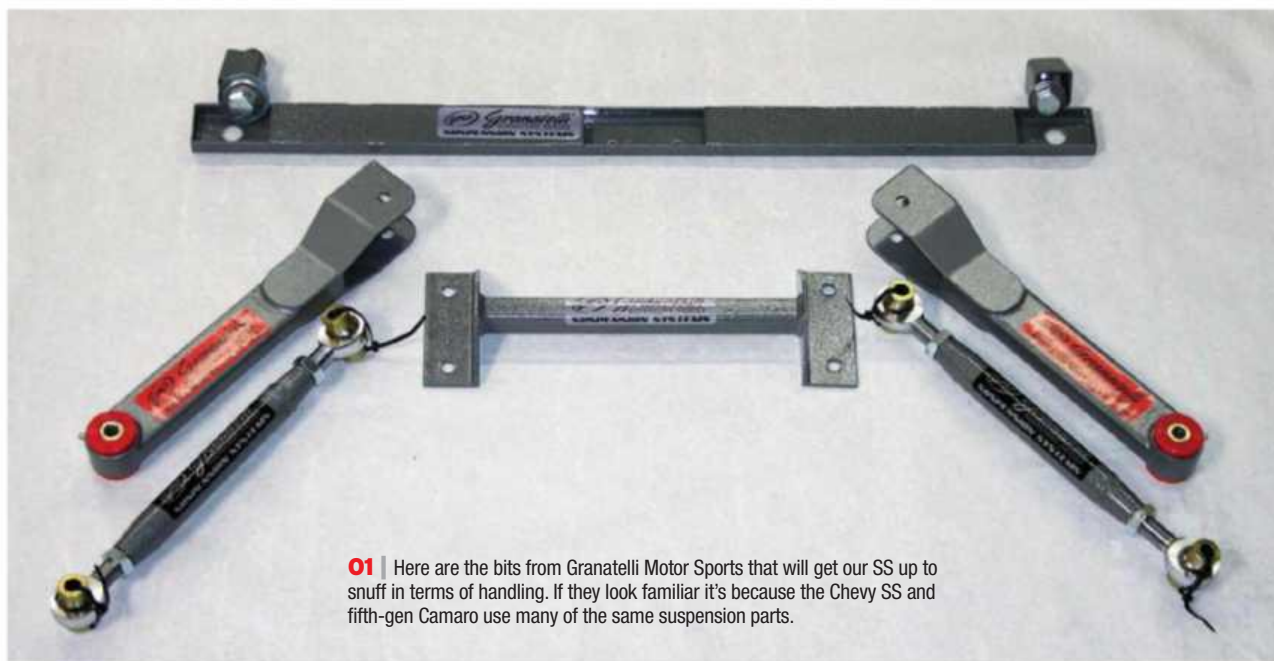
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on factory rubber. They didn't plan on superchargers, sticky tires, or driving ten-tenths on a road course. The net result is that parts and structures fine for a stock Chevy start to falter when the performance envelope is pushed past a certain point.

One area where improvements can be made is by swapping out key suspension and chassis parts. Remember, GM builds parts based on a car staying stock, and for this the stamped-steel suspension parts are fine. The problem is that they can't cope with the higher side loading encountered during aggressive driving. When loaded, they have a tendency to flex, causing geometry changes, which degrades handling. In addition, the soft rubber bushings used by the factory to ensure a cushy, noise-free ride, deform and further rob handling prowess.

The goal here is to firm things up to keep the handling predictable but not create a car that rides like a floor jack. Also, while these parts were installed on 2014 Chevy SS, the same parts and install procedures work on a fifth-gen Camaro. **CHP**



01 | Here are the bits from Granatelli Motor Sports that will get our SS up to snuff in terms of handling. If they look familiar it's because the Chevy SS and fifth-gen Camaro use many of the same suspension parts.



02 | The stock rear suspension on the SS is fine for a stock car cruising the streets, but if harder driving is the plan, the stamped steel stuff just isn't going to cut it.



03 | It's fairly easy to see how much stronger the new boxed, chromoly steel trailing arm (PN 500058) is compared to the stamped steel stocker. The big benefit is that caster settings won't change under hard cornering, and also will help eliminate wheelhop. We went with the fluted, greaseable, low-deflection polyurethane (durameter 80) bushings that are far superior to the rubber OE bushings.

04 | The trailing arm was a direct replacement for the stocker, which made installation a snap. A bit of grease on the poly bushings made sliding them into place easier.



Stop, Drop, and Corner



05 | The toe rod's job is to hold and maintain the toe settings of the rear wheels, similar to how tie rods do it up front. When cornering, the stock toe links can flex up to 0.600 of an inch on either side, making it impossible for the rear tires to maintain a flat contact patch in the corners. Granatelli replaces the stock toe links with 1.25-inch chrome-moly tubing and greaseless rod ends utilizing a standard thread left and right thread design. This eliminates all flex and deflection, ensuring the contact patch stays true regardless of how aggressive the car turns. The new tubular toe links (PN 50056-A) are much stronger and employ rock-solid spherical ends. They are fully adjustable so the rear toe alignment angles can be easily dialed in. Like the trailing arms, they were a direct replacement for the stock parts.

07 | Granatelli's solution is this replacement G-Load Brace (PN 500075). The tubular (1-inch diameter 0.125-wall steel construction) brace won't flex under hard load and greatly stiffens the chassis while reducing body roll.



08 | Working in tandem with Granatelli's G-Load Brace is their K-Member Support Bracket (PN 500072), also known as an A-arm Support. This bar triangulates and supports the front K-member, which reduces flex and helps to keep the front square. Think of it as an antisway or twist bar for the frame. By extending all the way across the front of the chassis it turns the "K" shaped crossmember into a reverse looking "D" shape. Oh, later we realized that the bracket was on backwards and that the flat, vertical side should orient toward the rear of the car.



06 | GM loves their stamped steel. Again, items like this tunnel crossbrace are fine for the street, but under hard track driving they tend to twist out of shape. The stock seat box support provides virtually no structural rigidity however. It often flexes and bends like a pretzel in sharp corners and even going diagonal into a driveway.



09 | Like all GM cars, the SS suffers from large wheel gaps. But like many things, it's a problem easily solved with some cash and a selection of tools. Here you can see a stock height SS on the left and a dropped one on the right.



10 | First up was popping the hood to get to the top of the strut towers. You can also get a peek at the Whipple supercharger that dramatically boosts the power output of the SS's 6.2L LS engine.



11 | We then unbolted the strut from the suspension and removed the assembly from the car.

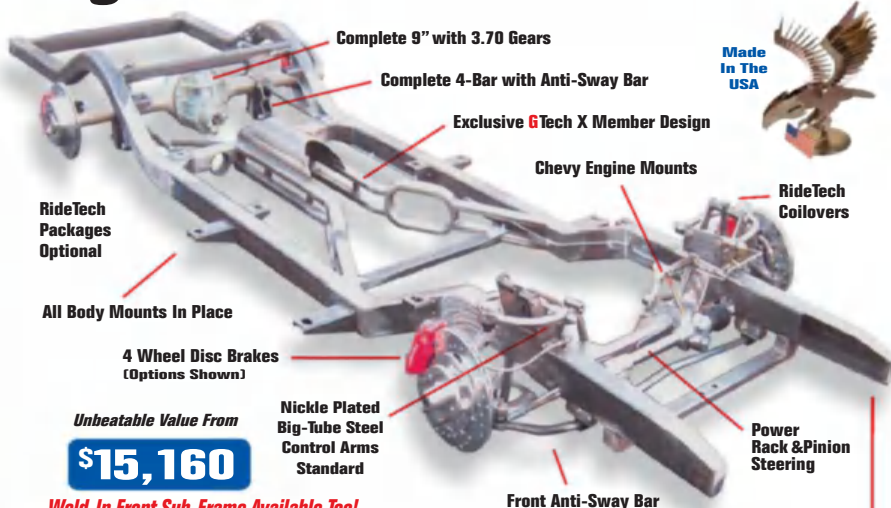
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Stop, Drop, and Corner



12 | The front spring is installed under quite a bit of tension, so a spring compressor was used. If you don't have one, most suspension shops will help you out for a few bucks.

13 | The Granatelli Motor Sports Lowering Spring Kit (PN 500023) helps rid GM cars of the "4x4" look they come with from the factory. The stated drop is 1.25-inches for the front and 1.40-inches for the rear.



14 | After installing the new springs on the stock struts, we once again used a spring compressor and reinstalled the assembly back under our SS.



15 | The rear coilover shock assembly was unbolted from the top and the lower control arm.





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16 | Unlike the front strut assembly, the spring on the rear isn't under nearly as much tension and can be carefully disassembled without a spring compressor. But, if you have one, use it.



17 | To accommodate the drop, we trimmed about 2 inches off of the plastic dust sleeves on the rear shocks.



18 | Here you can see the new spring assembly next to the stock arrangement.



19 | The coilover assembly was then slid back into place and secured using the factory bolts.



20 | Since we had the car apart, we took this time to upgrade the rotors to Granatelli's high-performance versions. They start out with virgin Brembo rotors before they are heat treated. They cross-drill then slot them before going to heat treat and then douse them in either black zinc or silver zinc coating. Slotting helps to dissipate gas pressure buildup under hard and/or prolonged braking, while dimpling helps in the cooling effect to ensure a great pedal feel. Granatelli reports the stopping distance (60 to 0 mph) goes from a stock 105 feet to under the magic double digit of just 99 feet.



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MORE POWER FOR THE PAVEMENT

The Chevy SS is a big car, and as such it needs big power to get all that mass moving quickly. The best way to get there was adding some boost, but reliability was a key concern so the plan morphed into making the engine as robust as the rest of the Chevy. With that in mind

a stock, stroked LS3 was ordered from Ken Duttweiler, of Duttweiler Performance, in Saticoy, California. Filled with forged internals, along with the right supporting parts, this engine should hold up to the floggings it's sure to endure.

21 | Like any engine project, this one required a solid block on which to build. For this one a new Chevrolet Performance LS3 6.2L block was fitted with a set of Darton flanged steel sleeves. The stronger bores were massaged out to 4.070-inch and the block was fitted with Clevite bearings.



22 | In addition to a Lunati Signature Series 4340 forged crank (3.622-inch stroke) Duttweiler chose H-beam forged (6.125-inch) con rods and Diamond 9:1 forged blower pistons. This made for a boost-friendly rotating kit able to easily withstand the rigors of big power coming from the Whipple 2.9L supercharger.



23 | Duttweiler also spec'd out a COMP hydraulic roller camshaft that came in at 214/226 duration (at 0.050-inch) 0.595/0.605 lift and a 118 LSA, a Cloyes timing chain, and an ATI damper. This will give the engine excellent idle characteristics and still allow big power under boost.



24 | The LS3 heads were left stock except for the addition of Manley valvesprings, retainers, and pushrods. A K&N intake kit helps with the air requirements. To help hold the heads down under boost ARP fasteners were employed.



25 | In terms of ignition, the obvious choice was a set of PerTronix Flame-Thrower coils (PN 30838) ...



26 | ... and JBA low-resistance plug wires (PN W0812).

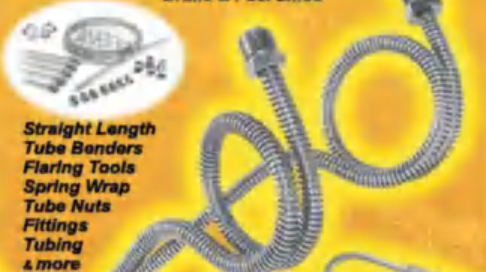
27 | Running on 91 octane and pushing 11 psi of boost (18-degrees timing) the stroker made 648 hp and 608 lb-ft to the rear tires! On 114 race gas (22-degrees timing) the same combo churned out 695 rwhp and 608 lb-ft. More than enough power to motivate the heavy Chevy.



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PARTS BIN

✦ by Nick Licata

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► Mickey Thompson Performance Tires & Wheels announces the availability of the ET Street S/S – an impressive performance radial street tire that's dragstrip ready. The ET Street S/S (S/S is for street-to-strip) combines the proven R2 drag tire compound with polyester-ply, steel belted, tubeless radial construction to deliver an exceptional combination of dry-traction performance, strength, and reliability. This new tire is offered in six popular 18- to 20-inch sizes: P285/40R18, P305/40R18, P325/30R19, P335/25R20, P275/40R20, P305/35R20. Go to mickeythompsonstires.com for more info, or you can give them a ring at 330.928.9092.



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► Rejoice, late-model LS fans! All Trick Flow GenX aluminum cylinder heads for GM LS engines are now emissions legal for use in all 50 states on all 1997-'15 GM vehicles (except 2014-'15 Corvettes) originally equipped with an LS engine (CARB E.O. Number D-747). If you are looking to improve the performance of your 5.3L Silverado or building a big-cubic-inch or supercharged LS7 for your fifth-gen Camaro, or even a serious LS3 for a C5 Vette, Trick Flow has you covered with its GenX cylinder heads. Check out the complete line at trickflow.com or call them at 330.630.1555.



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► Edelbrock now offers a new Performer-Plus camshaft for use with throttle body-style electronic fuel-injection systems on a small-block Chevrolet. Edelbrock Performer-Plus camshafts feature profiles that deliver a major improvement in throttle response and torque from off-idle to 5,500 rpm. They are smooth-idling camshafts for daily drivers and are designed specifically for use with 1957-'86 Chevrolet 283-400 V-8 engines with Edelbrock's E-Street EFI system and similar throttle body-style electronic fuel-injection systems.

For more information visit edelbrock.com or call their tech line at **800.416.8628**.



Chevelle SS Delete Plates

► Ground Up now offers delete plates for El Caminos with a Super Sport dash; they fill the space above the radio where the center air-conditioning vent goes. The days of scouring junkyards for this once hard-to-find item are over. Ground Up now carries them in two configurations: one with a Chevrolet logo, and one with a Super Sport logo centered on a black background with raised chrome letters. These are perfect for anyone doing a Super Sport dash conversion. For more info, call Ground Up at **866.358.2277** or visit them online at ss396.com.



Bel Air Brackets

► Performance Online's 1955-'57 Chevy Bel Air motor mount brackets are available in stock location and 3/4-inch forward for HEI ignition. The brackets fit both small- and big-block Chevy applications. Their mounts also accommodate seamed or seamless frames. The kit includes black powdercoated brackets and all attaching hardware and come with a limited lifetime warranty. Go to performanceonline.com or call them at **800.638.1703**.

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READERS' RIDES

By Nick Licata

Back in Black

» Aaron Smith is taking a somewhat subtle approach to upgrading his 2010 Camaro. He bought it used in 2011 in stock form with just 3,500 miles on the ticker. Not long after, he took it over to Bobby Meyers and Mark Sturgill at Kentucky Speed (Pikeville, Kentucky) for a bit more attitude: a cam, headers, and a ported FAST 102mm throttle body. The massaging is good enough for 474 hp and 434 lb-ft of torque to the tires. From there, he



went to BMR to gather up some suspension parts for better handling and improved stance. Combined with the Weld RT-S rollers, and we have to give Aaron props taking his fifth-gen to the next level and coming up with a killer-looking daily driver.

Aaron commented, "Right now, I'm just enjoying the car as it is, but I'm planning on supercharging it over the winter."

Sounds like a good plan to us.



East Coast Camaro

» When Andrew Szmigiel took over this 1973 Z28 Camaro, there wasn't much meat left on the bone. "The car was originally Daytona Yellow and about the only thing that I didn't replace or modify was the original gas tank," revealed Andrew. "It's been a 6-year labor of love."

The car is now doused in Pepper Metallic Gray and metallic black stripes. It's motivated by a 383 stroked small-block that belts out 450 hp and 435 lb-ft of torque and is backed up by an American Powertrain TKO 600 five-speed trans and a Moser 10-bolt rearend. Wilwood brakes reside on all four corners behind a set of gray custom five-spoke wheels, and the suspension was upgraded for better handling and improved driveability.

As Andrew points out, "See, not all the mint cars are on the West Coast. We gearheads on the East Coast have some pretty nice rides, too, even in western New York."

Photo by Brennan Shortall

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Homework

» You never know exactly when you'll get knocked on the noggin as to what will be stuck in the outskirts of your brain. For Derrick Thompson it was a 1963 Nova SS picked up by his peripheral vision walking to high school every day. Yeah, he took notice and admired the clean lines of the car, but the thought of owning it was never considered. The closest thing he ever thought he'd own to a steel-bodied Nova was the one in his Hot Wheels collection.

Post high school, Derrick's life carried on. A few cars came and went until his father retired and the two thought it would be cool to take on a muscle car project. They bounced numerous Chevy ideas around until they both agreed on a 1963 Nova as the starting point. A classified ad revealed a nice '63 that was totally dragged out and raced as a bracket car. Derrick recognized the car to be the same exact car he walked past a few hundred times on his way to school. This made the car even more desirable to him.



Over a 7-year period the duo was able to gather up enough money to obtain the proper parts so they could build it to their exact specs. Their initial urge was to go with a Pro Street build, but the recent Pro Touring trend grabbed their interest and sent them in a more practical build direction. A 406ci small-block rests between the 'rails and is backed up by a 700-R4 trans and 9-inch rearend armed with 4.11 gears. Four-piston Wilwood binders handle braking duties and Eagle Alloy wheels (17x7 up front, 17x8 out back) wrapped in Falken rubber adhere to the ground. An aftermarket handling suspension provides a much-improved driving experience while also introducing a much cooler stance.

The father/son project came out great, and with Derrick's two grandsons and three nephews showing interest in the car, it looks like this one will be in the family for many years to come.

Roadkill

» We're not sure if John Simioni is a fan of the popular YouTube Internet show, Roadkill, or if he got the license plates long before seeing the show. Regardless, John's 1966 Chevelle Malibu post car is motivated by a 454ci big-block. The engine sports oval-ported heads and roller rockers while a Holley double-pumper rests atop of the Stealth intake manifold. A Richmond Super T-10 four-speed trans is



quite able of handling the excessive torque, while a beefed-up 12-bolt houses 3.73 gears.

"I'd have to say it's got plenty of juice to get the car around town," John coyly mentions. The steelie wheels and white-lettered Mickey Thompsons give it a slightly sleeper-like demeanor, but knowing what's under the hood, we'd assume this vintage muscle is capable of running down, and over anything in his path, creating its own tasty brand of roadkill.

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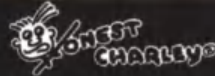
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JUST SAYIN

BY: Dennis Pittsenbarger



Doing the 12.99/\$1,299 Challenge

I think that Nick's exact quote was, "What did I do?" We had been talking about who really builds cars anymore. Because, from my perspective, all I see are guys who are putting cars together to make some marketing guy look like a hero.

See, throughout my scatterbrained, leapfrog career I've been both stricken with luck and held back by selfishness. What I mean is, I'm sick and tired of watching people ride off into the sunset with projects I've taken part in only to see them sit unappreciated and unused. One of my top five pet peeves is an unused vehicle, but that's a whole other rant.

What I'm directly addressing is helping people look past those who are lucky enough to either A: Have a \$100,000 budget to spend, or B: Have "A" and the R&D department chomping at the bit to stretch their legs in developing parts to sell to the public. Both are part of the business, but for those of us who are not in that one-in-a-million situation, we can only sit back and admire them while we scrape up a few bucks to build our own cars.

It's why I jumped (I mean, begged) to be a part of the 12.99/\$1,299 Challenge. For those in the dark, back when print ruled the media world a small upstart magazine called *Cars Illustrated* was started in what some called the downturn of performance and persevered to highlight the muscle of the day and show that the spirit of hot rodding was alive and well – even though it was gagging on L69 and 5.0 slugs.

Fast-forward 30 years and the same formula stands out: Cheap performance to all that dare to get their hands dirty and make the most of what they have. So this is the way it works: you take the budget of \$1,299 total investment (yes, the car, too) and see if you can make a 12.99 e.t. pass in the quarter-mile. Think it's easy? Just grab the nearest car you can find, strap on the NOS bottle, and away you go, right? Not so fast. I searched for a month to find the right car, and after a few calls and several unsuccessful negotiations on everything from a 1986 C4 to a Fox body, I shook hands on a 1991 Z28 – I can already hear it ... that car for how much? \$450, no way! Well, it didn't run and didn't have a fuel system, but what it did have was a huge hole in the trunk where the tweaker ex-owner had made a cut to replace the fuel pump. So put that in your pipe and smoke it.

And I wanted it to be a cool car, not just a sh!tbox with a bottle mounted in the trunk and a used set of slicks for a good 60-foot time. I also wanted to show that in today's world you could have a fast, fun car for under \$1,300, and carry some swagger while you do it.

Last time I checked that's the majority of the readers, the bulk of the YouTube viewers, and the guy at the local cruise night who hopes to "one day" have a car like that – that's ME! ... and it can be you.

I truly believe that the majority of us are looking for real speed at a more affordable price. Find a car from the past that you like (they are still out there) and build a real car that many of us real readers can obtain.

C3/4 Vettes, third-gen F-bodies, G-bodies, and Fox bodies are out there looking for some love and you can help spread the love, the love of cheap performance.

You see, with such a small budget, you have to get really focused, and since

I don't have the cash for a drop-in drivetrain solution, the crew and I need to really dig in on what would make a car quick. So, gearing, sticky tires, maybe a converter – those are the things that will get top billing. And we'll be doing a lot of free tricks and

cheap mods to maximize suspension travel. We also need to get as much weight out of the car as we can without making it look hacked.

With 12.99 the goal and a 3,300-pound Z28, I'm going to need to put about 280 hp to the ground, hit a 1.8-ish 60-foot time, find some 4.10

gears for a 7.5-inch 10-bolt, hopefully a 2,500-3,000-stall converter, and try to make it hook (Wow! What did I get myself into?). If I can do that and keep the thing together, I'll pull off the 12.99/\$1,299 Challenge. It's a goal that *Cars Illustrated* set in 1987. They came close, but I plan to put a 25-year-old car into the 12-second zone for under \$1,300 - including the car.

So come join me for some fun. It'll be a trip.



Dennis Pittsenbarger is an automotive industry expert, television personality, car restorer, racer, and walking encyclopedia of automotive history always on the hunt for his next great set of wheels.

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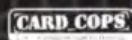


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